THE CULTIVATOR.

TO IMPROVE THE SOIL AND THE MIND.

NEW SERIES. ALBANY, DECEMBER, 1851. VOL. VIII.—No. 12.

Close of the Volume.

ANOTHER year has been added to our labors, which completes the TWENTY-FIRST, since an early formed love for agricultural pursuits, and a firm conviction that no branch of industry so much needed the aid of the press, induced us to embark in the then new enterprise of an Agricultural Journal. We were, at that period, almost alone, and the support received for the first two or three years, would have driven less sanguine hearts from the field in despair; but finding a few who appreciated our efforts, and extended to us their sympathy, we persevered until we saw our favorite GENESEE FARMER increase in circulation, from a few hundreds in 1831 and '32, to seventeen thousand in 1839, when it was united with THE CULTIVATOR. We deem it no more than just to name, among those to whom we were most indebted for aid and sympathy, JUDGE BUEL, of Albany, Hon. DAN BRADLEY and WILLIS GAYLORD, of Onondaga county, men whose early and strenuous efforts in the cause of agricultural improvement should make their memory duly cherished, —DAVID THOMAS, of Cayuga county, LEWIS F. ALLEN, of Erie county, and LYMAN B. LANGWORTHY, of Monroe county, all of whom, by their constant and valuable contributions, did much to give character to our Journal, and place it on a firm basis.

Then—in 1831—there were but three or four agricultural papers in the Union, and these had a very limited circulation, and but few Agricultural Societies. Scarcely a book on rural affairs could be procured, because there was no demand for them. Farmers had little ambition, and their farms, with rare exceptions, were rapidly deteriorating.

Now, Agricultural Papers and Books are scattered broadcast over our land, and the demand for information taxes science and experimental industry to the utmost. The wonderful achievements of American ingenuity, energy, and intelligence, are nowhere more distinctly perceptible than in the change in the agricultural aspect of the Union. Along side of the roads, whose iron-bands unite our most distant cities, upon the banks of the rivers and canals, whose waters bear away the products of our soil, there have been springing up intelligent, thinking farmers. We see proof of this in the crowded fairs, in which states vie with each other in the fruit of their labors, in the usefulness of their inventions, in the beauty and superiority of their domestic animals. Neighbors, towns, counties, states and nations, are all ambitious to excel in this *first-born of arts*, and to add new dignity to a profession as stable as the soil it cultivates, as wide as the earth it tills. Science boasts not now so much of the wonderfulness and intricacy of its results, as of their useful and practical bearing. Giving each feature of this progressive age its proper consideration, we must be allowed to rank advance in Agriculture as among the *first* of our national improvements.

From all this we gather abundant reward for past exertion, and increasing encouragement for the future. The science of Agriculture is yet in its infancy. A mere fraction of the farming population are aroused to the work of improvement, and who can say that his desire for knowledge on this subject is satisfied? The past should only teach us what mighty results continued effort may bring out of the future. There are momentary demands that once met, are never again heard of. There are fluctuating interests, that demand auxiliaries as variable, but there are also fixed and deeper demands which can never be fully supplied,—interests which cannot be pressed home too closely, or consulted too much. History, as well as experience, teaches that no scheme can be carried into successful execution, that is not vitally connected with the permanent well-being of the country. That an improved and fertile soil, and cultivated, resolute, active laborers on it, are the *sine qua non* of a prosperous nation and a happy people, no one will deny. To satisfy the demand for reliable information—to direct inquiry, —to incite investigation,—to form a correct taste on subjects of agricultural interest, and to perfect a system of husbandry, are our aims. In the variety, worth, and amount of matter we present, we are determined not to be out-done. To meet, as far as possible, the wants of the age,—to deserve the support and co-operation of those to whose interests we devote our best efforts, is our purpose.

It is then with little regret that we see the close of another volume of THE CULTIVATOR, for it brings renewed hope that the seed it has sown will spring up and bear a richer harvest than any of its predecessors; and we shall enter upon our next year's labors in the full confidence that we shall deserve and receive the co-operation and aid which has been so liberally and increasingly bestowed upon our efforts during the TWENTY-ONE years now brought to their close.

☞ We are preparing a PICTORIAL ALMANAC for 1852, which will form the first thirty-two pages of our next volume, and be sent with the January number to all our subscribers.

Agriculture of Illinois and Iowa.—No 2.

BY W. G. EDMUNDSON.

CULTIVATION AND MANAGEMENT OF THE WHEAT CROP.—The past season, owing to the cold and frequent rains that occurred during the spring and early summer months, has been very unfavorable for both spring and winter varieties of wheat. The country was completely submerged with water and mud, for a period of at least three months, and on the valleys and high table lands, the crops of wheat, corn and oats, proved an entire failure throughout a breadth of territory equal to the area of the arable land of New-York. The early settlers of the country have no recollection of a similar rise of waters; and indeed the damage to the crops from this source, excepting on some of the low river bottom lands, is not to be apprehended in future seasons, any more than the inhabitants of eastern states, might with propriety anticipate occasionally a similar catastrophe. In an average of seasons, the natural tendency indicated by the topographical formation of the western prairies, would be a short supply of summer rains, rather than an excess; and this fact is here mentioned to allay misapprehensions that may be formed, by those interested in the progress of the west, based upon the losses sustained to the agriculture and commerce of this vast and interesting region of country the present season.

The wheat plant, as all experienced cultivators will admit, delights in a dry porous soil, one that will not hold any superabundance of water that may fall from the heavens on or near the surface, like a basin; but will allow, after the active soil becomes sufficiently saturated, the balance to either pass off over the surface, or else settle down into a porous gravelly subsoil a sufficient distance from the presence of the roots of plants to prevent any serious injury. Besides this, with proper farming, a dry summer is always more propitious on this continent for winter wheat than a wet one. For these reasons, and many others that in due course of time we shall fully mention, we felt warranted in arriving at the conclusion, that the day is not far distaut when the anticipations formerly entertained of the Upper Mississippi Valley, becoming the most productive granary of the world, will be fully realised. The qualities of the soil, the influences of climate and the geographical position of the country, all conspire to make our prediction, among the easiest possible things to be accomplished. Abundant crops of the delicate descriptions of grain will not, however, grow spontaneously, but by investing the same amount of skill and capital in their cultivation and management, a larger yield may in an average of seasons be produced, than can be done in the Union. Although rains were so abundant the present season as to drown out the crops in the valleys, yet on all high rolling lands the average yield of wheat would range from 15 to 25 bushels per acre, where any thing like justice was done the crop in the preparation of the soil. Rust, on either winter or spring wheat, was by no means common, and the weather was of that peculiar damp and warm character that would have predisposed the crop in New-York to that disease. This great bane to the wheat growing interests of Pennsylvania, New-York and New England states, is not considered by the farmers of Illinois and Iowa, as among the necessary contingencies to check their success in growing wheat crops. This is decidedly a favorable omen, and it is one that has a greater influence on our mind than any other in producing the conviction, that the wheat growing power of these states are by no means understood by those who eagerly advise the farmers to cease growing breadstuffs, and turn their attention to the cultivation of corn, to grazing, and other branches of agriculture. It is proper here to state, however, that there are sections of country that are quite too level for the profitable growth of wheat, but by far the greater portion of the arable lands are adapted by nature for this crop. Indeed, judging from what we have already seen, we should conclude that a much greater proportion of those states may be denominated wheat soils, than could be claimed by either Ohio or New-York.

The timber invariably skirts along the rivers and streams, and in proportion as the streams get smaller the breadth of timber widens. Along the Mississippi, Illinois, Fox, Rock, Desmoines, Cedar and other rivers of the largest size, only from one to five miles in width of timber are skirted along their borders; but as soon as the traveller reaches the source of those streams, where an abundance of springs almost invariably abound and the country becomes beautifully undulating and frequently interspersed with small living streams, few or no large prairies are found, and the timber and prairie land are nearly equally divided. Wherever large streams or rivers run nearly parallel to each other, the timbered land as has already been stated, is scarce; but at the head of those rivers or streams, nature has wisely arranged a beautiful high rolling country, thickly interspersed with never failing springs and an abundance of enduring water power for hydraulic purposes; and besides the prairie and woodlands are so beautifully divided that no one need be at either much expense or trouble in owning a farm which in point of beauty and quality has no rivals in any other country through which we have previously travelled.

To those who have never seen a prairie country, words would fail in appropriately portraying their beauty so as to convey any thing like an accurate impression of their vastness and grandeur. A prairie ten miles in breadth and fifty in length, may be considered an average size for those that stretch along the larger branches of such rivers as Illinois, Rock and Demoines. But the Mississippi and Illinois rivers afford prairies many hundred miles in length and from twenty to forty miles in breadth. These large prairies are not desirable for arable culture, from the fact that the entire absence of timber gives them a perfectly monotonous appearance, so much so that it is painful to the eye to behold them; and besides the cost of getting a supply of timber for buildings is so great that for some time to come they will not be sought after by capitalists or be brought into cultivation. A prairie from three to five miles in width and some twenty miles in length is among the prettiest rural sights we have yet had the good fortune of beholding. In almost every instance where prairies of this size have come under our observation, they have presented a beautiful undulating appearance, rolling back in both directions from the

woodland, in a style that would thoroughly captivate the mind of every true admirer of nature, until the summit level was attained, when an unbroken stretch of high level table land intervened between the undulating portions, ranging from two to three miles in breadth, and as far in the distance lengthwise of the prairie as the eye could behold, without being able to distinguish any ob-object other than herds of sleek fat cattle grazing on the rich herbage so bounteously supplied by the hand of Providence. Bordering these prairies, ravines repeatedly join on to the belt of woodlands, which act as feeders to the streams, and carry off the over supply of water that falls in shape of rains. Since the white man has taken possession of the country, great care has been observed to prevent the fires from running over the prairies, as was formerly the case, when the red man of the forest owned the country. These ravines in almost every instance, have become skirted with a young growth of beautiful timber, in many instances a mile in width, and frequently from one to five miles in length, and occurring in favorable distances of from two to five miles apart, have a charming influence in imparting a rich and healthful appearance to the rural landscape, that can neither be imagined nor described.

There is at this time a much greater supply of wood, in Illinois especially, than was the case fifteen years ago. This supply will go on increasing, until in the lapse of twenty years timber will be sufficiently abundant for agricultural purposes. What is now much wanted is a thick growth of young timber around each quarter section of prairie, averaging some six rods in width. This could be obtained at a trifling cost, and in ten years the timber would attain the average height of fifteen feet, and would not only add to the beauty of the country, but would shelter the fields from the raking winds of winter, and ultimately be the means of supplying the country with an abundance of wood for fuel and building purposes. Live fences, where timber is scarce, are the best and cheapest for a prairie country; and at an early day we shall give our views in full, accompanied with some practical directions on this somewhat new and important branch of business to American farmers.

At the head of nearly all the streams we have yet visited, a wide range of country, lying between the heavy timbered land and the prairies, occurs, which is here denominated "*barrens.*" The quality of the soil and the timber grown upon it, greatly resemble those of the oak openings, so distinguished for the growth of wheat and clover, in Genesee and Monroe counties, New-York, with the difference in favor of those of the west, that the ground is much richer in vegetable mold, from the fact that a vast growth of prairie grass, where the timber is thin, is usually seen. This deep vegetable soil, ranging from four to ten inches in depth, would relieve the farmers in a great measure from the necessity of employing gypsum as a top dressing on their clover crops, which in the east has been found indispensible for the success of the clover and the succeeding wheat crop. We learn from reliable sources that the barren lands so called uniformly are located at the head waters of all the streams of the west. These to our mind are the most valuable lands of the country; and for the cultivation of clover and wheat, and for the pasturage of sheep, will some day be as much appreciated, as has become the celebrated soil of Wheatland, New-York. It is proper here to remark that on the barrens, or oak openings, clover and sheep, are employed as the agents by which the fertilizing properties of the soil are replenished and enlarged, converting a naturally poor or barren dry soil, in process of time to one so rich and fertile and in every respect adapted to the crop, as to produce in an average of seasons from twenty to forty bushels of the finest quality of wheat per acre. These lands may now be had for from one to three dollars per acre, and indeed are thought in most cases unworthy of cultivation.

There is ordinarily sufficient timber upon this quality of land to fence it, and the clearing, plowing and grubbing will cost from $6 to $8 per acre—which with a fee simple title, will bring it up to a price ranging from twelve to fifteen dollars per acre under fence and in crop. The first year it will produce about fifteen bushels of wheat per acre, and the second year it should be summer fallowed by plowing once in autumn and twice in summer, and sowed with wheat in the early part of September, at the rate of two bushels per acre. With the wheat crop, the land should be seeded with clover and timothy and pastured or mowed, the first year, and the second year's clover pastured till midsummer, and the clover sod in the early part of August plowed as deep as possible for wheat—once plowing only would be necessary, and by breaking up the clover sod at least one month before the period for sowing, the ground will become sufficiently pulverized to be seeded with a drilling machine, which in all cases may be advantageously employed, when the land is clear and in a high state of cultivation.

The foregoing is as nearly as possible the plan of cultivation we should practice, were we to attempt successfully to grow wheat on a large or small scale, on the barrens of Illinois and Iowa. In an average of seasons, it would be reasonable to expect at least thirty bushels of first quality of wheat per acre, and the land for an almost indefinite period of time would continue to yield that or a greater quantity in periods of three years. If the whole of the clover was fed on the ground it would ultimately become so rich that damage would be experienced from an excessive amount of straw, but a skillful operator would then either cut a crop of hay in one of the two years that it would be in clover sod, or else in each breaking up plow from two to three inches deeper than the previous plowing until the soil became broken and friable to the depth of from twelve to fifteen inches. The soil, both surface and subsoil, on the barrens, is of a dry warm nature, and the surface is in all cases sufficiently undulating to constitute it in an eminent degree among the best wheat lands of this Union; yet we find that it is a perfect drug in the market, so much so that much of it can be had at Congress price, within a convenient distance of large and populous villages and settlements. The wheat plants on those barrens, are not so liable to be winter killed as on the prairies, and now and then a farmer, with whom we conversed on the subject, acknowledged that those lands might some day be brought into profitable cultivation.

The difficulty of growing in an average of years a highly remunerative crop of wheat, on a deep, rich, prairie soil, is much greater than what would be experienced under the foregoing treatment, on lands in a state of nature, so poor that it is thought at the present time to be so worthless that it would not pay the cost of clearing, fencing, and cultivation. These difficulties, however, are not of that nature as to make them insurmountable by a scientific farmer, or one, rather, who understands adapting his soil to the requirements of the particular crops he attempts to cultivate. Winter killing by winter and spring frosts; the blowing of the small particles of the soil on the surface, thus exposing the roots of the plants to the action of the rays of sun, and to frosts; and the almost total absence of snow, by which no protection is given to the wheat crops during winter, are among the serious obstacles that a western prairie farmer has to contend with, provided he makes the business of wheat growing a primary object. These may be sufficiently obviated by a clever process of engineering, if the term be admissible in this instance, so as to secure, in ordinary cases, favorable results. Deep culture is a prominent feature by which a moderately deep vegetable soil can be fitted for the success of the winter wheat plants. In all cases where it is practicable to bring to the surface from two to three inches of clay, no reasonable effort should be spared to effect that object. The late autumn months, if other things be equal for the performance of this labor, are the best calculated to ameliorate an inactive soil, from the fact that the frosts of winter have a more perfect mechanical action on stubborn, or inert soils, than any other agency. In all cases where very deep plowing is attempted, with a view of ultimately preparing the soil for winter wheat, the fall or winter should be chosen for the performance of the work. As autumn plowing is ordinarily done, it frequently not only does no good, but a palpable damage is done the soil for the succeeding

crop. If plowed in flat beds, or lands, with few or no parallel furrows for the water to pass off from the surface, the freezing and thawings during winter and spring will cause the mass to run together, and in the spring, instead of breaking up fine and mellow, the soil will be cloddy, and totally unfitted for profitable cropping. Narrow lands with deep water furrows, appear necessary to obviate this evil; but on some soil the natural tendency is to wash along the furrows so as to make deep trenches, unfitting the land in many instances for cropping, without a large expenditure be made in reducing the surface to a perfect level. This influence of course must be guarded against, and it would be better not to attempt autumn plowing or deep-water furrowing unless, a great advantage would certainly accrue from them. The best method with which we are practically acquainted for deepening soils, is a species of deep trench plowing which is entirely unknown in the western country, and which, if neatly done, would act like a charm in pulverizing, and in changing the wild and adhesive character of new prairie soils. A plow that will naturally turn a furrow of fifteen inches, is set to turn thirty inches, and consequently only one half of the thirty are turned. The fifteen inches acted upon by the plow is made to rest neatly upon the portion not turned, so that the two extreme edges are brought exactly together. If the furrow be turned six inches in depth, the frost and atmosphere will act upon a surface of forty-two inches, instead of thirty in the ordinary case. The whole surface of the field would then present a trenched or ribbed appearance, exposing a much larger surface to the action of frost than would ordinarily be the case, and at distances of thirty inches would be a deep drain, which would thoroughly carry off any surplus water that might otherwise remain on the surface. In addition to this, a sub-soil plow might be made to pass along each furrow to the depth of six or eight inches, which would still deepen the soil, and by mixing the sub-soil, thus tempered by frost and the atmospheric influences, a consistency would be given to the whole surface acted upon, which would eminently fit it for the production of wheat or any other crops, with much less labor than would be required if the common method had been practiced. Sod thus broken, by the two surfaces being brought evenly together, will undergo a more perfect decomposition than by any other process. The furrows being so close together, and numerous, will prevent the soil washing to any extent, and when plowed crosswise in the spring, the work may be commenced much earlier than land not thus treated, and the whole will be reduced to the finest possible tilth.

To prevent winter-killing of wheat, a fresh inverted clover sod, turned up in narrow lands; a liberal seeding of about two bushels per acre; early sowing; and drilling in the seed in rows about nine inches asunder, are among the mose feasible plans we are prepared to recommend to the favorable attention of those who may attempt to grow this crop extensively on a prairie soil. Where the land is properly prepared for the use of the drill, it will perform an important office, such as no other implement could effect with so little cost. The plants being in rows, become stronger than if scattered promiscuously over the ground; the roots intertwine in each other so perfectly that the frost can not remove the one without the others; the tops of plants form an umbrella covering, which protects the roots from early and late frosts, and hence the crop will arrive at an earlier maturity; and the free circulation of air between the rows imparts a hard outer surface to the straw, which will naturally aid it to resist the attack of rust and fungus productions. Some, we are aware, will object to sowing two bushels of seed per acre on a rich prairie soil, but if the system of culture we have hastily submitted for public trial and criticism be tested, we pledge our word for it that in nine cases out of ten the result will be highly favorable, and when the system becomes generally practiced, the cry of hard times will be among the things that were. *Keokuck, Iowa, Oct.*, 1851.

Get in wood for fuel before snow falls deep. See that animals are well sheltered.

State Cattle Show at Baltimore.

We are indebted to our friend Dr. G. B. SMITH, of Baltimore, for the following notice of this show, which appears, from all accounts, to have been one of the best ever held in the country.

FOURTH ANNUAL CATTLE SHOW AND EXHIBITION OF THE MARYLAND AG. SOCIETY.—This great exhibition commenced on Tuesday the 21st of October, and closed on Friday evening the 24th. It was the most splendid affair that has ever taken place in this State, and according to the opinion of many good judges, superior to anything of the kind that has ever occurred in the United States. At all events it is difficult to conceive how, or in what point, it could have been surpassed *anywhere.* The writer of this has been familiar with such scenes for thirty years, in all parts of the country; and has carefully read details of those in Europe, but, taken as a whole, he is free to say the Maryland display of 1851 was unrivalled. In only two points this affair did not equal some of the Northern shows: *Beef Cattle* and *Visitors.* The first was strangely neglected by the graziers within our jurisdiction,—who supply the best beef in the world, and to whom the Philadelphia and New-York victuallers are indebted for a very large portion of their best supplies. Even in this point, however, there was a good display, and even old John Bull could have supplied himself with roasting pieces to his jolly heart's content. Of the second point, *visitors,* if the numbers compared with *agricultural population* be considered, it will be found that even in this view we carried off the palm triumphantly. Peculiar circumstances rendered the receipts at the gate small in proportion to the number of visitors. The ground and buildings are owned by a large number of stockholders, all of whom were entitled to free admission with their families, and to *duplicate* or transferable tickets in number according to the number of shares of stock held by them; and all members of the Society and their families; and all exhibitors, servants and assistants, were entitled to free admission. It will be obvious that these free admissions embraced a very large portion of the attendants; and yet the receipts at the gate amounted to upwards of *five thousand dollars* for admission alone. The friends of agriculture, therefore, may congratulate themselves on the rapid strides this great interest is taking in the improvements of the age.

The grounds of the Society are located about two miles from the center of the city, and about one-fourth of a mile from its northern limits. They comprise about twenty acres, nearly in the form of a square. About three-fourths of the ground is clear of timber, and the balance handsomely covered with a grove of thrifty oaks. A large portion is a fine level, the rest a gentle elevation, on which the buildings are situated. The Society's buildings are, a large "Household Hall," in the form of a cross, for the accommodation of all the various domestic fabrics of the farm-house, dairy, &c. A large ladies' saloon, a large house for office use, a vegetable exhibition hall, &c., and five large refreshment houses. All the grounds is enclosed with a high board fence, and the whole line of the fence inside is occupied by stalls and pens for cattle, horses, hogs, sheep, &c. There are nine hundred

stalls and pens, all substantially built, and under roof. The high ground or grove is, to a considerable extent, occupied by pens for poultry, sheep, &c. Besides the Society's buildings, there are two others built and occupied, one by Mr. Whitman, the other by Messrs. Sinclair & Co., for the accommodation of their extensive collections of agricultural implements, and add greatly to the effect of the scene. The property having been purchased by a stock company for the use of the Society, it will be improved and arranged with a view to permanency.

The exhibition of improved cattle was very imposing, and comprised all the various breeds of any note; improved Durham short horn, Devons, Ayrshires, Holsteins, Alderneys, &c., to the number of about four hundred head. Numerous horses for farm purposes, of light and heavy draft, mules and jacks,embracing many of the most useful breeds known, were exhibited. The number of the various breeds of swine was very great, and finer specimens could not be produced anywhere. The writer felt much gratification that it did not fall to his lot to act on the committee of judges to award premiums for *the best* in this department, it would have been so difficult to select any ten out of the several hundreds that were entitled to much preference. All the various breeds of sheep were also there in great numbers. The new Oxfordshire sheep attracted great attention; but the most remarkable sheep were those exhibited by Mr. Bingham of the State of Vermont, being three French Merinoes, lately imported by him. These came too late for competition, but afforded much gratification. The poultry pens were supplied with a very extensive collection of the feathered tribe, of every known breed. Thousands of well informed people expressed astonishment at the great additions and improvements that have been made in this department of rural economy. The collections of implements and machines exceeded, beyond measure, anything heretofore seen. Every description of machinery used in agriculture and the domestic arts was there in great profusion. Threshing machines, worked by horse and steam power, mills for grinding corn, and corn and cob crackers and grinders, straw and hay and root cutters, &c. &c., a list of all of which, a mere catalogue, would occupy a whole year's publication of The Cultivator. The *portable* sawing machine of Mr. Page, however, ought to receive special notice, as it is calculated to effect a wonderful improvement in the whole country, in facilitating the construction of plank roads. It is easily transported to the spot where the timber grows. Is worked by either steam or horse power, and cuts the plank of any desired length and thickness, with wonderful precision and speed. With these saw mills on the lines of projected plank roads, the construction of these most valuable improvements is rendered both cheap and easy. The time is at hand when plank roads will be as important to the country at large, as railroads themselves, if indeed not more so. They will everywhere be used and will form the connecting tracks between farms and small towns and feeders of railroads, and this saw mill of Mr. Page will be the active agent in their construction.

In conclusion, I regret that the Editors of the Cultivator could not have been here to see this our great exhibition. I inclose a detailed list of the premiums awarded, and from this you may judge somewhat of the extent of the exhibition. I do not suppose you will be able to find room for it in The Cultivator, even if you have time to count the number of premiums.

Farming in Delaware County, N. Y.

Eds. Cultivator—Having just returned from attending the meeting of the Delaware County Agricultural Society, held at Delhi the 8th and 9th of this month, I thought I would jot down some few remarks growing out of the occasion. Slight and unimportant as they are, they may at some busy moments answer the imperative cry of "copy," when you could not, otherwise, conveniently attend to it.

A stronger and more real motive, however, is that in this day of intelligence, when the enlightened farmer is sensible that an agricultural paper is as necessary to his business as an almanac. I know of no way in which I can so well venture a few suggestions to the rising Scotch agriculturists I there met, as through the medium of the "Cultivator"—presuming always, that a community, apparently so bent on advancement, would not neglect so important an assistance. Indeed, I am inclined to estimate the intelligence and advancement of a rural district, in some degree, by the number of agricultural periodicals it requires.

From Morris to Oneonta, we had a beautiful drive over a fine road. Here we crossed the Susquehanna. Leaving it to wander down its own fertile valley, we commenced clambering our way over the rough and stoney mountains of Davenport, thence dropping into the little valley of the Olcout, we soon recommenced our toilsome way to the high lands of Merideth. Here the scene changed, and our view opened on well cultivated fields, regular enclosures, and comfortable homesteads. A handsome residence, with a fine farm of eight hundred acres, was pointed out to us as belonging to S. A. Law, Esq., president of the County Ag. Society, and whose great exertions, in common with those of some few others, have, I am told, infused an energy and vitality into the society, that promises higher results than have heretofore been attained.

We now had descending ground, and a tolerable road into the pretty village of Delhi, which we reached about noon. I will here remark, that had we returned home by the same road, we might well have wondered what interest or what object there could have been in either claiming or defending such lands; but returning, as we did, by Franklin, we were shown a very improved face of the county, and we could not sufficiently admire the industry, perseverance and skill, which had thus tamed down and subjected to the plow such wild lands.

After dining at a most comfortable and excellent hotel, belonging to Judge Edgerton, we walked to the ground enclosed for the Exhibition, where we found a variety of stock from breeds, evidently selected with that good sense and judgment which gives due consideration to the circumstances of climate, culture and character of the farms on which they were to be placed. In the various sheep pens, were to be seen some admirable "Cheviots," showing purity of blood and great constitution; near them

were a few good South Downs, ready to enter the lists with their hardy rivals of the mountain, and claiming something on the score of earlier maturity. There also was to be found the little Saxon and its various Merino crosses, wrapped in their light but beautiful coats of exquisite wool; a dress somewhat more aristocratic, I must allow, than the frieze jackets of their Highland and English neighbors; but winter, sharp biting winter, will decide their relative value. Two French Merino lambs were also on the ground, from the flock of Mr. F. McIntosh, of Otsego co., which created much speculation and no small inquiry, this being quite a sheep district.

The display of working oxen told its own story, for with the exception of a few yoke, they were ill-matched, ill-trained, and ill-conditioned, and evidently of small account with the Scotch farmer, who undoubtedly finds his team of small active horses much more suited to his hill-lands, than the slow, heavy movement of oxen.

The cows exhibited, were, I doubt not, remarkable for the *dairy* properties for which they were shown, and this is as it should be. They were, (as all deep milkers must be,) light in condition, and not moving masses of flesh, hardly yielding milk enough to cover the bottom of a pail, but making beef instead of butter; and yet I have seen such immensely fat animals take premiums as "*cows*" over those that *did make butter*, and consequently could not *cover themselves up in fat*.

Dairying, which admits the active labor and co-operation of a whole family, (from the "chiel" who drives the cows to the byre, up to the bonnie lassie who helps her mother milk) is well suited to the industrious habits of this people, and is pursued by them to a great extent, and with such attention, care and economy, as secures a profitable and ready market for its products.

Tenacious as the Scotch may be of habits acquired in their father-land, (and better habits no people need bring with them,) I nevertheless find that the wooden milk dish has for the most part given way to the neat tin pan of the Yankee, saving the "gude wife" much time and trouble in washing, airing and drying; and something too has been conceded on the absolute necessity of every pan standing on an *earthen floor*, a creed strongly insisted upon in Ayrshire.

Before leaving this portion of my subject, I will again repeat what I suggested on the spot—that the dairy farmers should form amongst themselves a company for the importation of "Ayrshires." Let them be yearling heifers, or "queys," as they are called, from the "Moor-edge," selected by one of themselves—not from the "*improved*" families at high prices, but bought in fairs at the now moderate cost of five to seven pounds a head; and ship them, direct from Glasgow in a vessel belonging to that port, which will take them at a very moderate freight; the shippers providing all necessary fodder and *water*—the ship furnishing casks by *agreement*.

Having a brother whose estates lie in Ayrshire, I made myself well acquainted with the breed of cattle, and consider them, in their own pastures, a *most valuable dairy* stock—how they would *transplant* is the experiment to be tried; and I know no community nor any district to whom its success would be so important; or who, proving it successful, would derive more advantage, or more decidedly establish the value, in this country, of the Ayrshire breed as a *dairy* stock.

In the county of Delaware, where oxen are neither fed nor worked to any extent, and the cow is only valuable for her dairy properties, everything should give way to this excellence, and therefore size is undesirable, early maturity is not of much importance, and the feeding property quite a secondary consideration, if either the one or the other is found to interfere with the milking qualities.

The plowing was of course most excellent. It is the very pride of a Scotch farmer to do this part of his work well; he considers it the foundation of all good farming. In the Butternuts we are especially indebted to our Scotch neighbors of Burlington, for a vast improvement in this particular, and now our young American farmers press close on the heels of their instructors.

But very few swine were on the ground. In a dairy country I had expected a larger show of this most useful animal, as but few calves, comparatively, are now raised in Delaware. Nevertheless, two fine sows, with their litters, showed a thorough knowledge of this description of stock. Of horses, I have still less to say—though I doubt not they were well suited to the country and its work,—small and active, they travel this hilly country with much more ease than a heavier and larger horse.

Possibly, some might have felt disappointed at not finding here stall-fed oxen, monsters in obesity—fine, large, high-headed and high fed steers in the yoke—Short-horns, imposing in size and beauty, or sheep of the long-wooled families, heavy but indolent; I was, however, better pleased by observing the close attention which had been paid to that important principle in all good breeding, of "*suiting the animal to the soil*"—a point too frequently over-looked by purchasers of fine stock, who at the moment may be more attracted by the individual excellence of an animal, than mindful of the suitability of the position to which they contemplate transferring it.

R. *Morris, Otsego co., N. Y., Oct.* 11, 1851.

Characteristics of the Season, 1851.

The spring, in the Northern States, was cold and backward, and even through the summer months, the amount of really warm weather was less than usual. May, June, and August were characterized by an unseasonably low temperature. July and the fore part of September were warm,—the season presenting in this respect singular contrasts. A marked contrast has also been afforded between the present and last year, in regard to the amount of rain which fell during summer and autumn, as will be seen by the following comparison

	1850. Inches.	1851. Inches.
May,	6.01	2.61
June,	5.72	4.57
July,	8.57	3.48
August,	2.50	2.17
September,	6.56	1.27
October,	4.31	2.93*
	33.67	17.03

There has been no season within the recollection of the "oldest inhabitant," perhaps, when so large a portion of

* Of the amount in this month, 1.42 inches fell on the 29th and 30th.

the country has experienced to the same extent as this year, the effects of drouth, though there have probably been years when more damage, in the aggregate, has been done to crops from this cause. The drouth has extended from Virginia and Kentucky northward to the Canadas. Within this extent of territory, however, there are belts and small tracts, which have been so favored with occasional rains, that vegetation has received nearly a supply of moisture. Streams and springs are very low at this time,(Oct. 29,) and unless copious rains should fall before winter sets in, much inconvenience will be experienced.

Hay was a full crop, coming off in most sections before the drouth had become severe. The quality is generally good. It is fortunate that the country is well supplied with this important article, as, from the scarcity of grass, farmers have, in many instances, been under the necessity of feeding their stock considerably from the barn or stack, for several months.

Wheat gave a good return over nearly the whole country. The yield was somewhat lessened by drouth in the Southern States, but even there, the superior quality of of the grain fully compensated for any deficiency in quantity. In almost every section, with the exception of Wisconsin and a portion of Illinois, no complaint has been heard in regard to this crop. In the eastern part of New-York,and in fact throughout all the eastern part of the country, so large an amount of this grain has not been obtained for many years, and taking the whole country together, the aggregate product is doubtless beyond any former precedent. The great success which has attended the culture of wheat in the eastern part of the country, within the last year or two, is owing in a great measure to the adoption of a variety of wheat, the Mediterranean, which, from its habit of early ripening, has escaped the wheat-midge, an insect which for several years almost totally destroyed this crop. This enemy is gradually extending itself west, and in the western counties of this State, and in Ohio, has done considerable injury the last and present season.

Rye has been less cultivated, in what have been considered the particular districts for the production of this grain, than formerly, because the farmers have returned to the culture of wheat—the latter yielding the most profit. Rye, however, gave about its usual yield.

Barley yielded much better than last year, and the quality of the grain was also superior. The crop has sold at a fair price, nothwithstanding the large yield. The market was chiefly cleared of the old stock before the new came in. Prices have lately ranged from 75 to 80 cents per bushel.

Oats were better in this vicinity, both as to yield and quality, than last year, but as far south as Virginia and North Carolina, the crop was hurt by drouth. This crop is regarded with much favor by many farmers. It can be produced in many situations where other grains would not flourish, and it meets with a ready sale at a price comparatively high—40 to 42 cents per bushel being frequently obtained, in the valley of the Hudson river, for oats that are brought early into market. They are always in demand as horse-feed—experience having shown that there is no food so congenial to the animal, being easy of digestion, and imparting both strength and spirit.

Indian corn has fallen short of an average yield over a large portion of the country. This deficiency in the Middle States was caused chiefly by drouth, but in the northern sections, we are inclined to attribute the failure more to the coldness and wetness of the weather in May and early part of June, in connection with the great injury done to the crop in its early stages by the wire-worm. Heavy rains were frequent in this section soon after planting, and continued for some time while the crop was small. The rains were followed by high, drying winds from the west and north, which by rapid evaporation caused the soil to become heavily consolidated, with a hard crust on the surface. This state of the soil, with the cool temperature, and the attack of the wire-worm, so checked the crop that it never fairly recovered, except in very favorable locations. The crop was backward, in ripening, and but for the unprecedented heat of the first twelve days of September, (the maximum height of the mercury having been for several days above 90°, in the shade,) it would not in this part of the country, have escaped injury from frost.

Potatoes, as usual, are more or less affected by the rot, though we think the crop is more sound, and the yield generally better, in the eastern part of New-York and in the New-England States, than for several years before. In the western part of this State, however, the rot or disease, has prevailed to a great extent. Nothing new, of importance, has been brought out in reference to this malady, except that many new conjectures in regard to it have been proved to be unfounded.

Buckwheat, so far as we have learned, is almost a total failure. In a large portion of New-Jersey, and in parts of Pennsylvania and Maryland, it is a crop of considerable consequence, and in these sections it was cut off by drouth.

Fruits have succeeded well in some sections, while in others they have failed. Throughout a large portion of the Western States, apples, pears, cherries, &c., were mostly destroyed by a frost in May. In the northern parts of Ohio, Indiana, &c., we are informed, there is a partial crop of apples. In New-Jersey, the southern portion of Pennsylvania, Maryland, &c., there is a greater scarcity of apples than has occurred for several years. Whether the failure in the latter districts was caused by frost, we are not informed. In New-York and New-England, we believe fruits in general have succeeded well. Winter apples of fine quality are plenty in market at $1.50 to $1.75 per barrel. Plums, a crop of considerable value in the vicinity of Albany, were abundant, but hardly of as fine a quality as usual, for the want of warm weather while they were growing. Grapes, in the open air, have not attained their usual flavor from the same cause.

How Nations can Acquire Wealth.—There seems to be but three ways for a nation to acquire wealth: the first is by war, as the Romans did, in plundering their conquered neighbors—this is robbery; the second by commerce, which is generally cheating; the third by agriculture, the only honest way, wherein man receives a real increase of the seed thrown into the ground, in a kind of continual miracle, wrought by the hand of God in his favor, as a reward for his innocent life and his virtuous industry.—*Benjamin Franklin*

The Mineral Manure Theory.

ANALYTICAL LABORATORY, YALE COLLEGE,
New-Haven, Conn., Oct. 24, 1851.

EDS. CULTIVATOR—The subject which I have placed at the head of this letter, is not one which can be fully discussed in a single page of your journal; and yet it is one of so much importance that I desire to make a few explanations and statements, regarding the shape which it has now assumed among scientific men. When I mention the "mineral manure theory," I speak of that view of manures which ascribes all, or nearly all, of their efficacy to their mineral constituents.

The principal supporter, and indeed the originator of this theory, is Prof. Liebig. This distinguished chemist, distinguished no less by his clear and lucid style, than by his high scientific reputation, was for a time devoted to "the ammonia theory," excluding those mineral manures to which he now attaches so much importance. A few years since, however, he saw cause to change his ground, and has since held, that if we furnish mineral manures in abundance, plants will, without doubt, always obtain their ammonia, or rather their nitrogen, from the atmosphere or the soil.

In pursuance of this idea, he went so far as to compound, after careful study of ash analyses, specific mineral manures for wheat, rye, oats, turneps, &c., which were to take effect upon all soils in a proper physical condition. The failure of these specific manures, which were patented in England, was, as many of your readers doubtless are aware, very decisive. I had supposed the subject rather at rest, but find that in the last edition of Prof. Liebig's "Letters on Chemistry," published so late as the commencement of the present year, he reiterates his former views on this subject in a most decisive manner, and prophecies that our future agriculture will depend upon them, however much we may distrust and disbelieve them now. I have also had occasion to observe quite recently, that some gentlemen of high standing among our own scientific men, follow Liebig in this as well as in other theories. For these reasons I have thought it best to express my own opinions on this contested point, in order that our farmers may be aware, that all chemists do not hold to views which militate almost directly against the ordinary results of practice.

My belief is, that when Prof. Liebig advocated "the ammonia theory," he was nearer right than he is now, when he only admits the necessity of mineral manure. Not that he was right then, but that better results would, in most cases, be obtained by the farmer in the use of ammoniacal or nitrogenous manures alone, than by the use of mineral manures alone. We find land in all parts of the country, where strictly mineral applications, such as lime, plaster, marl, &c., fail to produce any very marked effect; but if upon any of our fields we apply guano, or sulphate or carbonate of ammonia, the character of the vegetation is at once changed, its color alters, its luxuriance and vigor increases, and in a great majority of cases the product is augmented.

Every farmer who has observed such matters intelligently, knows that the above statements are correct; indeed they have been so far applied in practice, that the quantity of ammonia which any manure contains, is taken as the highest standard of its value. A guano, for instance, with the usual percentage of ammonia, will bring twice as much as one which contains little ammonia, even though this deficiency is replaced by the most valuable possible mineral constituents.

I must not be understood to say, that mineral manures are not valuable; on the contrary, I have the highest opinion of them, and recommend their application in almost all cases where my advice is asked; the mineral constituents of the plant are no less indispensable than its organic part, and if one or two of them are absent from the soil, the plant will not flourish. There are many instances of these special deficiencies, which special mineral manures alone will supply, and there are certain mineral substances which have been found specially valuable; the most so of all these is phosphoric acid. Now, the *phosphates*, that is, the compounds of this acid, are not more necessary to the plant than are the *alkalies*, but the supply is far more apt to be scanty, and this—not its intrinsic importance to the plant—is the cause of its higher value to the farmer.

The same principle applies when we say that nitrogenous manures, of which ammonia is the most common form, are more valuable than any others known in agriculture. They are volatile, easily decomposable, and very soluble; for all of these reasons they are extremely apt to disappear most rapidly. These manures, then, are worth more to the farmer than any others, because they are most likely to be needed, and because their scarcity renders it somewhat difficult to obtain a full supply. I make these statements fearlessly, and confidently, although against so high an authority as Liebig. I should not presume to oppose him on mere theoretical grounds, but feel that I am here sustained by almost uniform practical results.

It must be acknowledged that we have occasional instances reported, of plants grown upon soils nearly or quite destitute of vegetable matter; but in most of these that have fallen under my observation, the fact of the *entire absence* of vegetable, and particularly of nitrogenous matter, has not been sufficiently established. The information that they give is neither entirely definite, nor well enough made out by continuous and careful experiments, to be set off against the immense array of facts brought forward in favor of the opposite view. Single experiments for a single year, must always be looked upon with distrust until amply verified, and it is by mainly trusting to such, so far as we are informed, that the exclusive mineral theory has been built up. The laboratory alone is pretty sure to go wrong when it attempts to prescribe rules for practice; the chemist must go into the field and study actual experience, if he would serve the farmer effectually.

It has been my intention to experiment somewhat largely upon this particular subject, but in the last number of the Journal of the Royal Agricultural Society of England, is a paper by Messrs. Lawes and Gilbert, that almost precludes the necessity of doing anything more. These gentlemen have been experimenting on a large scale during the last ten years, and their results are clearly and admirably set forth

They took a field at the close of a four years rotation, when the manures added at the commencement of the

course were exhausted. On this ground they have cultivated wheat for ten years, under various conditions. One plot remained unmanured, and the produce of this served as a standard and starting point for comparison during the whole period. Thus, if its yield in 1845 was 17 bushels per acre, the improvement over this in an adjoining plot, otherwise the same, was set down to the advantage of whatever manure had been employed. Such a system of cropping, continued for so long a time, obviously affords results that are worthy of much confidence.

The first year's comparative practice, was made with various approved mineral manures alone. It was found that even by the addition of large quantities of these, the increase of product over the unmanured plot was but trifling. In the next year the same character of mineral manures was employed, but with the addition in several cases of ammoniacal or nitrogenous substances; in all of these the effect was quite marked, the yield increasing to 10, 12, and 14 bushels, above the unmanured plot.

This, in short, was the character of all the results; sometimes ammoniacal manures alone were added, and then the increase was several times more than by mineral manures alone. One experiment was very striking. Four hundred weight per acre, of Liebig's special mineral manure for wheat, was applied to a plot, and produced an increase of but about two or three bushels; upon this same plot, in the next year, a purely ammoniacal manure gave an increase of ten or twelve bushels. To make the experiment still more conclusive, no manure was added to this plot for the next crop, and the yield then fell again almost to the original standard. These trials seem to me perfectly conclusive in this matter, so far as wheat is concerned; they prove that ammoniacal manures increase its growth far more than mineral manures, where both are already present in moderate supply, and that the addition of any amount of the latter will do little good, unless the former be also present.

These views are still farther sustained, by a very able paper in one of the late French Scientific Journals. The experiments in this case was made upon oats, and were between forty and fifty in number. They commenced by growing them out in sand, first deprived of everything soluble by acid, and then burned to drive off all vegetable matter. In this, as might have been expected, no perfect plants were produced. One mineral substance after another was added, until at last it was found that with a certain *seven* of them, the plant flourished better than with any others. It, however, was still far from luxuriant, or from yielding a fair amount of grain; it was not until some manures containing nitrogen had also been added, that entirely healthy, fertile and strong plants were obtained. These experiments appear to have been very carefully conducted, and furnish important confirmation to those of Messrs. Lawes and Gilbert.

There are other questions involved in these experiments, which for want of space cannot be discussed here; the main point is, I think, fully established. The farmer may supply special deficincies by special mineral manures, and should aim to keep up the supply of mineral substances in the soil; but he cannot render it fertile, and continue it so, with them alone; he must also supply nitrogen in some form, and will find it in a great majority of cases the most important and efficacious of all fertilizers. In despite of *theoretical* views to the contrary, he will find that in *practice*, he can best afford to give a high price for those manures that are especially rich in ammonia, or some other compound of nitrogen. Yours truly, JOHN P. NORTON.

Close of the Great Exhibition.

An exhibition of the industrial products of all nations may be considered a new feature in the world's history. Hitherto the strife of nations has chiefly been to circumvent each other by the game of war. The present year will even be remembered as marking the time when the first great step in checking this selfish and aggrandizing spirit was taken—when in compliance with a cordial invitation from one of the greatest reigning powers of the globe, all nations were assembled, by their representatives, for the purpose of comparing the progress of each in those arts which conduce to the welfare and happiness of man.

The general effect of this exhibition cannot but be salutary on the world at large. Its tendency will be to promote peaceful relations, to do away monopoly, and to diffuse useful knowledge among men. The *London Morning Chronicle* well remarks—"We have, as yet, no standard whereby to measure the probable consequences of the gigantic undertaking. It has shown to the nations of the world what each can do,—animating, inspiring, and instructing all. National prejudices, antipathies, and animosities, have given way before the 'natural magic' of its influence. A mighty lesson has been unfolded for mankind, bidding all to note the wisdom, and the goodness, and the glory of Almighty God. The lesson cannot, will not, have been read in vain."

The description of the exhibition has formed a prominent topic in the newspapers and periodicals of the day, on both sides of the Atlantic, and most of our readers are sufficiently informed, through the letters of Mr. JOHNSON, which we have published, and from other sources, in regard to the most interesting particulars. It was finally closed on the 11th of October.

Total number of visitors, 6,201,856.

RECEIPTS.

Public subscriptions,.....	£64,344	0	0
Privilege of Printing,.....	3,200	0	0
do Supplying Refreshments,...	5,500	0	0
Season Tickets,.....	40,000	0	0
Received at the doors to 11th of Oct.,.....	356,071	13	0
Total,.....	£469,115	13	0

The liabilities amount to £170,743, thus leaving an available surplus of £298,372 13s.

The awards of Council or Great Medals, to our countrymen, were as follows:

Joel Borden, Jr., Texas, for a preparation called Meat Biscuit.

David Dick, Meadville, Pa., for Anti-friction Press

C. H. McCormick, Chicago, Ill., for Reaping Machine.

Wm. Bond & Son, Boston, for the invention of a new mode of observing Astronomical Phenomena.

Charles Goodyear, New-Haven, Ct., for India Rubber Fabrics.

Produce of Twelve Acres.

EDS. CULTIVATOR—I am induced to give you a short description of a piece of land near the Niagara River, on the farm of Moses Cherry, Esq. The land in this neighborhood is rather peculiar. That portion where black-ash timber grew, though wet and swampy, is excellent land when fully drained, even with open drains; while the land nearer the river, and on either side of the ash tracts, is poor and scarcely worth cultivating. On the

portion where the black-ash grew, is a friable, mellow loam, of seven or eight inches, or even a foot in depth, resting on a tenacious subsoil. On the dried soil surrounding these swamps, is a stiff barren clay, into which the roots of plants can penetrate only with difficulty.

The following is the produce of twelve acres cultivated by Mr. Cherry last season.

800 bushels of corn in ears, sold at 25c.,	.....		$200 00
750 do potatoes at 50c.,	.....	....	375 00
135½ do wheat at 100c.,	.....	.....	135 50
			$710 50

Mr. Cherry had 35 acres of wheat this season, (1851,) which averaged upwards of 30 bushels per acre. In the management of his land, his first object is to drain the surface, fairly, which has been done so far mostly by open drains, and thus managed, the produce is abundant. WM. H. SOTHAM. *Black-Rock, Oct.* 17, 1851.

Laying-in Trees for Winter.

A correspondent wishes to know the best mode of preserving removed fruit trees, intended for spring planting, from mice and severe frost during winter. In answer—set them *upright* on the surface of the ground, or in a moderate hollow dug for the purpose, and then bank up the earth into a broad mound about them, raising it well up the stems. Mice will never ascend a fresh bank of earth under snow. The trees should not be placed so compactly together as to prevent the earth from filling in pretty well among the interstices. If rather tender, incasing or thatching with two or three inches thickness of any evergreen boughs, will afford good protection from severe cold.

Large and Small Potatoes.

EDS. CULTIVATOR—I perceive, by recent communications in your paper, that although potatoes have been raised for more than two hundred years, it is still disputed whether large or small ones are the most profitable to plant for seed. Being myself in the dark on this point, I concluded to contribute my mite towards the solution of the problem by submitting it to the test of experience.

On the thirtieth of April, 1851, I planted, on one square rod of land, in seventy-two hills, seventy-two small potatoes, from the size of a hickory nut to that of a hen's egg. The seed measured about two quarts, and weighed three and a half pounds. To plant an acre in this manner would require ten bushels of seed. On the same day, on a square rod adjoining, I planted seventy-two large potatoes, in seventy-two hills, placing one in each hill, without cutting. The seed measured more than a peck, and weighed fifteen pounds.

On the twentieth of August, I dug both patches. The product of the small potatoes was five pecks, weighing eighty-four pounds, which would give a yield of two hundred bushels to the acre. The product of the large potatoes was one hundred and fifty-eight pounds, measuring nine pecks, which would give three hundred and sixty bushels to the acre. The vines averaged four to each hill, while those of the small potatoes were only three. The vines from the large potatoes grew much faster and larger than the others, but in the size of the potatoes there was no great difference.

When I planted the two patches, I expected the product would be about alike. Not being yet satisfied that so great a difference will always result, I shall try the experiment again next season.

Last year there was no rot among the potatoes in this part of the country. The early part of the season was cold and very dry. The same kind of potatoes on the same farms, with the same cultivation, are now rotting badly. I attribute the prevalence of the rot to the great amount of rain that has fallen here the present season. T. F. *Scio, Mich., August* 23, 1851.

Protecting Tender Roses.

The Prairie Farmer has for several years successfully protected tender roses by covering them with tan-bark, and then shielding the tan-bark from rains by a covering of boards. A Tea rose, which had always stood without injury by this treatment, was accidentally deprived of the shelter of the boards, by which the tan became soaked with rain, and the plant was destroyed. For the same reason, the soil must be well drained. Stripping off the leaves before covering, prevents their decay in contact with the stems, an occurrence often causing portions of the bark to blacken with decay.

ANSWERS TO INQUIRIES.

INTERMIXTURE OF VARIETIES OF CORN.—TYRO, Greenfield, Mass. If common and sweet corn are planted side by side, smooth grains will, as you say, be found on the ears of sweet corn and shriveled grains on the ears of the common corn. If you take the smooth grains from the ears of sweet corn, and plant them by themselves, the produce will be various—most of the grains will show of the character of the sweet corn, seldom being as hard and flinty as the original flint stock; some will, probably, be more or less shriveled. If the shriveled grains are taken from the ears of common or flint corn, and planted by themselves, the crop raised will also show the intermixture of the varieties; there will not be a strict uniformity in the produce, some grains being almost identical with the pure sweet corn, others of a medium, or half and half character, others scarcely deviating from the parent flint. But the result of the mixture can be worked out, in the course of several generations, so that it will scarcely appear, by carefully selecting for seed the grains which most resemble the original stocks, and planting them where there can be no further amalgamation. By a similar course, a new hybrid variety can be produced. Many varieties are known to have thus originated. The Darling sweet corn may be named as an example. This was produced by a cross of the sweet with the early Canada corn. The seed of the hybrid variety was taken from the stalks of the Canada—the object being to produce a sweet corn with the habit of growth, or early maturity of the Canada. The shriveled grains which most closely resembled the sweet corn, were picked out of the ears of the Canada, a crop raised from them, and the sweetest grains again picked out of this crop, and so on, till after eight years' careful selection, the new variety became well established.

CABBAGE AND TURNEPS FOR MILCH COWS.—D. B. R.,

Dutchess county, N. Y. There is perhaps no crop which would afford a larger amount of food than cabbages, but they, as well as turneps, are likely to impart a disagreeable taste to milk and butter. Pumpkins are excellent to feed cows, and by being protected from frost, may be kept till December, or later. Carrots are preferable to any other roots for this purpose.

Mixing Ashes with Manure.—"A Lover of Farming," Walpole, N. H. "Do wood ashes operate on manure in the same manner as lime?" Lime tends to liberate the ammonia of manures, by combining with the carbon with which the ammonia was previously united, thus setting free the latter. According to Mr. Bartlett, whose communication is given in our November number, wood-ashes have a similar tendency to liberate ammonia. We cannot refer to any experiments made to test this point. It is not improbable that something of the effect mentioned, may take place from a combination of the carbon of the manure with the potash of the ashes, which would separate the ammonia from its union with the carbon. Potash, however, greatly promotes the solubility of carbonaceous substances, and is highly beneficial from this action. At present we are inclined to think that wood ashes, mixed with strawy stable manure, at the rate of a bushel of the former to a cart-load of the latter, would be on the whole beneficial. But accurate experiments on this point are desirable.

Hops.—"F.," Wheeler, Steuben county, N. Y. Your best way to obtain a knowledge of the cultivation of hops, would be to go into some neighborhood where they are grown, and personally examine the whole process. The roots could be packed in boxes or barrels and sent to any part of the country. You will find an article on this subject in our volume for 1847, pp. 82, 83.

Budding on the Black Cherry.—R. H. We have seen the cultivated cherry, engrafted on the black, but it did not do well. We have heard of some attempts at budding on the black stock which did not succeed. If the union of the two were practicable, we cannot see that it could have any advantages over budding on the mazzard stock.

NEW PUBLICATIONS.

Harper's Magazine for November is before us. It is well sustained, and will do much in forming a taste for a higher literature than has heretofore been the burden of our leading monthlies. It is difficult to particularize articles, where all are pleasing and instructive. The biography of Napoleon is replete with interest, and shows in its true light his transcendant genius as a general, and his wonderful ability as a statesman, in combination with rare virtues. The "Editor's Table," "Easy Chair," and "Drawer," display a marked originality, to say nothing of the wit.

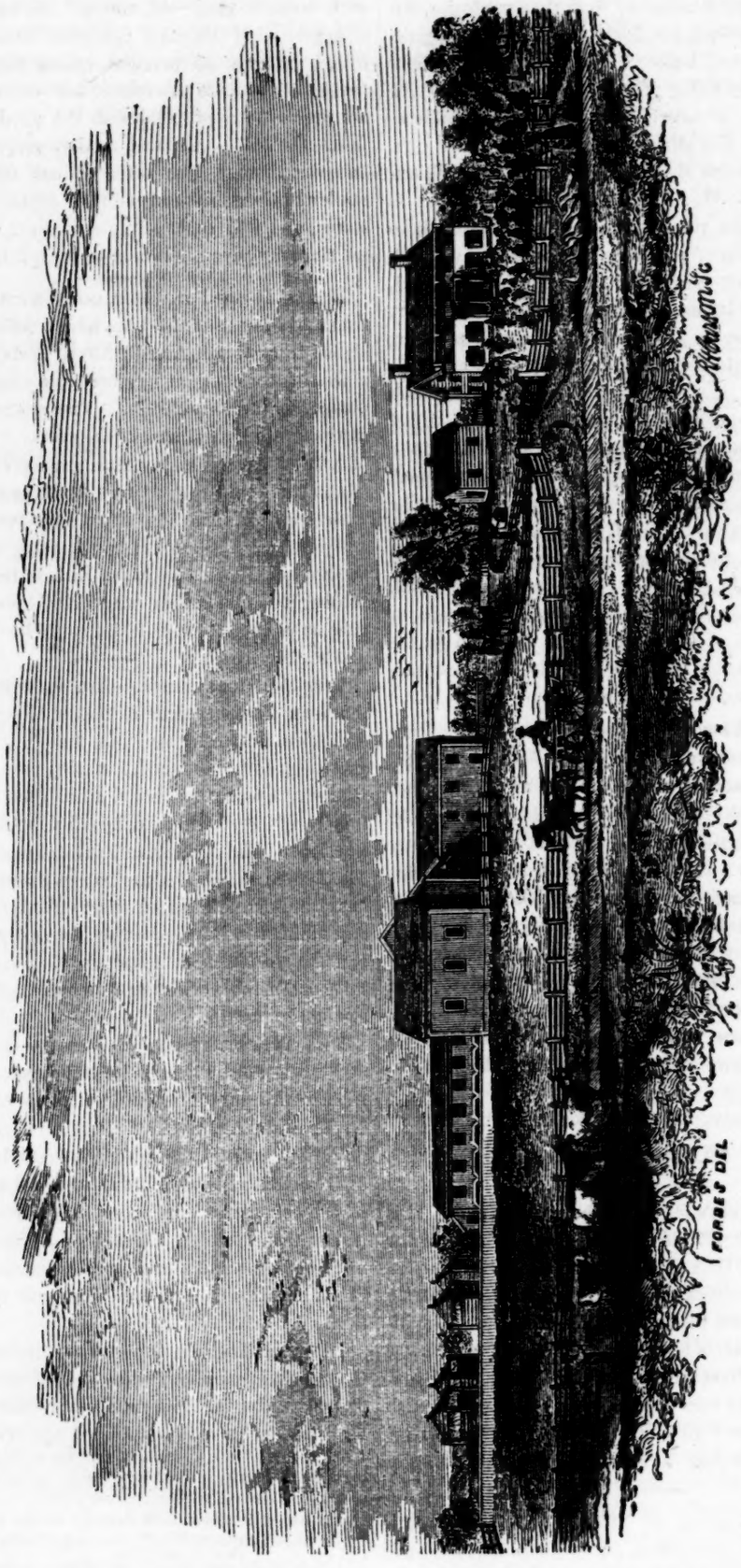
Glances at Europe, by Horace Greeley.—We are indebted to the publishers, De Witt & Davenport, New-York, for a copy of this work. Perhaps it is a sufficient commendation to say that the book has the original stamp of its author. It certainly forms an epoch in Journals of Travel. Most American travelers seem to have thrown up their peculiar views and in-bred sentiments, on the ocean passage, and straightway fall in love with some "gray old tower," or other age-honored structure; but Horace Greeley *Americanises* everything. A free, independent, radical thinker, as he is, he praises all he finds to admire, and censures what he cannot approve—appropriates all the good, and frankly exposes the bad—tells facts as they are, and truths as he believes them. The book will not fail to instruct the reader in the social and political aspect of the European states, and will especially please those who like an honest sincerity, even if it conflict with private opinion.

Rural Homes, by Gervase Wheeler. New-York, Charles Scribner.—This adds another, to books designed to cultivate Architectural Taste, and assist those who wish to combine neatness and elegance with convenience, in their dwellings. The author claims, as the distinctive, original idea of the work, "the embodiment of a fixed principle in rural architecture," capable of adaptation to all conditions and circumstances. The volume comprises models of buildings, means of warming and ventilation, plans for harmonising the dwelling with the surrounding scenery, and hints in the selection of furniture, &c., concluding with a theory of rural architecture as a fine art, and its influence on the mind, heart, and social virtues.

The Horticulturist.—Among other notices of publications, showing signs of better things in the literary and scientific world, we would not forget one, that has grown up under our own fostering care, The Horticulturist. Closely restricted to its own sphere, it has the "spice of life," which originality imparts to any production. The extensive horticultural information of Mr. Downing, his discriminating power, and easy, flowing style, give him an enviable rank in the editorial corps, and make the Horticulturist the *text-book* in rural art, and the *standard* in rural taste. A new volume (the 7th) commences with the new year. Price $3 a year—two copies for $5.

The International Magazine—published monthly at New-York, by Stringer & Townsend—leads off this month, with an extended description of the Fair of the N. Y. State Ag. Society, illustrated by several well executed engravings, from the pen of Horace Greeley. This periodical is enriched by original articles from some of the best American prose and poetical writers. Extracts from foreign literature—a record of important news at home and abroad, and notices of new and valuable publications. It has a wide and extending circulation.

Pioneer History of the Settlement of Phelps and Gorham's Purchase, is the title of an octavo volume of 620 pages, by O. Turner, Esq., whose "History of the Holland Purchase," we noticed a year or two since. This work embraces the history of the entire center of Western New-York, and shows the indefatigable efforts of the author in the collection of every thing tending to illustrate the trials, character and energy of the first settlers of the "Genesee Country." It is a most valuable contribution to the general history of the state, and will be read with lively interest by the numerous descendants of those whose history it delineates, and who are now scattered over our wide-spread country—for, fruitful as is the celebrated Genesee Valley, it has sent forth its thousands to aid in subduing the ever receding "far west." Published by Wm. Alling, Rochester



Farm Buildings of D. D. T. More, Middlebrook Farm, Watervliet.

Farm of D. D. T. More.

This farm, which received the second premium of the New-York State Agricultural Society in 1850, is situated in the town of Watervliet, on the Albany and Mohawk Plank Road, two miles from Albany. It has been in Mr. More's possession and occupancy for the last six years, and during that period has presented one of the most striking examples of successful and profitable improvement that we have ever known. Previous to Mr. M.'s purchase, it had been for fifty years subjected to an exhausting course, under the leases of various tenants—the annual rent of the whole farm being but one hundred dollars, and that deemed too large a sum by the tenant—as the whole amount of produce was only worth $400 to $500 a year. Mr. More, in fact, bought the place in opposition to the advice of all his friends, who deemed it impossible that the land could afford him and his family "a living." But notwithstanding the soil was so much reduced, that, in Mr M.'s language, almost the only crop he could raise at first was white beans, his clear judgment and practical knowledge of agriculture induced him to make the purchase, at $60 per acre, and the result has more than realized his anticipations. The benefit of his good management has been of no small value in the promotion of improvement in his neighborhood. His "good works" have stinulated others to "do likewise," and much of the land adjoining his, and which, at the commencement of his operations, was in a similar condition, has advanced in price more than 100 per cent., and is made to yield a bountiful return for good cultivation.

Mr. More has accomplished his results under many disadvantages. For a large portion of the time since he began, he has been in feeble health, and has been only able to exercise a general supervision of his affairs, without attempting bodily labor, but his constant vigilance and care has well verified the maxim, that "the *eye* of the master will do more work than his *hands*." Neither has he derived any benefit from the labor of his family. In his statement to the Society, he says—"My family consists of wife and five children, the oldest but fourteen years old, so that my children have been of little assistance to me—the balance of account being decidedly against them."

When Mr. More took possession of his farm, all the buildings on it were reckoned as not worth more than $100, and "the fences had all rotted down, or become nearly worthless." He sold the dwelling for $50, to be taken away, and the barn he pulled down. All the buildings and fences now on the premises have been put up by him. In making the purchase he says—"I paid all the money I had, or could raise, which left me more to pay as interest than the former occupant paid as rent. But notwithstanding I have since put up my buildings, fences, and all other improvements, I have paid the interest, and reduced the principal, besides this year's (1850) profits."

We take from the *Transactions* of the N. Y. State Ag. Society for 1850, the following, from Mr. More's answers to questions propounded to the competitors for the premiums on farms:

1. My farm consists of one hundred and eighty-five and a half acres of land. No waste or woodland.

2. Soil, a sandy loam; subsoil, principally a coarse sand; am not aware of any limestone existing on the farm; no stones worth mentioning.

3. I found the best mode of improving my land was by plowing under clover; the growth of the clover was much aided by a liberal application of plaster, say 250 lbs. per acre.

4. My experience is decidedly in favor of deep plowing—not less than eight inches, and often deeper.

7. Yellow and white pine, white and black oak, scattering hickory, poplar and sassafras trees, were the principal trees originally. Sorrel and couch grass were the principal weeds.

8. I find from my experience I derive the most benefit by applying manure as a top-dressing.* I use much of my manure on my rye crop, in the following manner: After the grain is harrowed in, I apply from twenty to twenty-five loads of manure, (double loads, say thirty bushels each,) spread evenly over the surface. I have never failed to get a good crop of rye. The grass seed is sure to take, and the growth is much aided by the manure; the clover being plowed in, leaves my land in excellent condition for a crop of corn. I manage my manure by heaping in the yard, turning it, and keeping it covered with earth, to prevent as much as possible the escape of the gases. I have no cellars for manure under my barn, but have cisterns for collecting the urine.

9. My means of making manure are from the keeping of about thirty head of cattle, and from four to six horses, and mixing in various ways, all the straw that my farm produces. I make in this way about three hundred loads of manure, and usually buy as much more.

10. I prefer to have my manure pretty well rotted. My usual mode of applying manure has been as follows: Plow under clover, plant corn, follow with potatoes, and then rye, with a top-dressing of manure, not so much for the benefit of the rye as for the clover, and future crops. I am satisfied that my land has improved rapidly from this mode, in fact at such a rate that I shall not be able to follow it, so far as the rye crop is concerned.

11. I am not aware of any way of increasing manure cheaper than by purchasing it, being so near to Albany, where it can be bought from twelve to thirty-seven cents per load.

12. I have used lime, guano, and plaster. Lime I have applied to a considerable extent, usually as a top-dressing. Have used plaster, principally upon clover, with much benefit. Guano I consider too dear for common use. Stable manure and lime I consider the cheapest, considering their effects.

13. I tilled this year one hundred and forty-four acres, as follows: ten acres of wheat, thirty-five acres of rye, twenty-seven acres of corn, thirty-five acres of buckwheat, twenty acres of potatoes, twelve acres of broom corn, one acre of sowed corn, two acres of melons, fifty rods of asparagus, and one and one-half acres of strawberries.

14. I have cultivated wheat more as an experiment than anything else, as for the last few years it has been almost a total failure in this section of the country. My manner was as follows: I sowed after potatoes, spring wheat of the Black Sea variety, about the 15th of April; harvested about the 4th of August, at the rate of six and a-half bushels per acre. In the cultivation of my rye crop, I sowed part of it after potatoes, and a part on a clover lay; sowed the last week in August and the first week in September, one a half bushels to the acre; harvested about the 15th of July; product seventeen and a half bushels per acre. The crop was much injured by a hail storm in the latter part of June, to the extent I

* In reference to Mr. More's mode of applying manure, it should be remembered that he plows "not less than eight inches deep, and often deeper." Therefore in choosing between plowing in manure to this depth, or top-dressing, the latter is, perhaps, preferable, especially when, as in this case, the main object is to promote the growth of clover. Still, we cannot but regard it as probable, that if the manure was fairly covered with earth, say to the depth of two to four inches, its effects would be greater in the end than if it was left entirely on the surface. Eds.

think of eight or ten bushels per acre. I did not discover much difference between the manured potato ground, and the clover lay, which confirms my previous opinion, that a clover lay plowed under, is about equal to a dressing of manure.

I cultivated corn as follows: twenty-two acres on clover lay, part plowed in the fall and part in the spring. After the clover had got about ankle high, I plowed it deep, passed over with the roller, harrowed well, marked both ways three and a half feet apart, and planted from 4 to 6 seeds in a hill; planted the last days of May and first of June; as soon as I could see the rows I went through with the cultivator; in about a week after, went through with the cultivator again, followed with the hoe, making it perfectly clean, and thinning it to four stalks in the hill. I kept the cultivator stirring the ground as much as possible, till the corn was about three feet high, then went through with the shovel plow, and hilled moderately. As soon as the corn was glazed I cut it up by the ground, and set it up in small stooks. I consider stalks as the most valuable cured in this way. I planted part of the eight-rowed white, and part of the eight-rowed yellow. I found the yellow corn some ten days earliest, but the white yielded best; I did not keep it separate. The whole averaged fifty-six bushels per acre. Five acres of sweet corn I planted the first days of July; the ground was well manured by top-dressing, cultivated the same as the common; picked the 15th to 30th of October. It sold in the market principally, at 62½ cents per hundred ears, amounting to $257.33. The stalks are much more valuable than the other corn, as they contain a larger proportion of saccharine matter.

I sowed this year thirty acres of buckwheat; after mowing, I turned over a clover lay, and sowed between the 15th and 20th of July, about three pecks to the acre. Harvested about the 10th of October; produce eight hundred and thirty-one bushels, twenty-three and three-quarter bushels per acre. On fifteen acres I sowed rye with the buckwheat, which looks well, and bids fair to be a good crop.

I cultivated twelve acres of broom corn, on an island in the Hudson river. In consequence of the late spring freshet, I planted the first week in June, ground plowed deep, well harrowed, rolled and marked three feet apart, and planted with Campfield's Drill Barrow, hills eighteen inches apart, ten seeds in the hill; it was tended much the same as Indian corn, cut when the seed was in the milk, cleaned and cured in the shade, to keep the brush green. My usual crop is about seven hundred pounds per acre. This year, in consequence of having been twice overflowed, the crop is much injured, and will not yield more than four hundred and ten pounds per acre.

One acre of corn I sowed for fodder. Sowed the last of July, cut and fed to the cows through the month of October. I find it excellent for late green feed.

I cultivated two acres of melons; watermelons, citron melon, and preserve citron. Planted the first of June. After the land was put in good order, by deep plowing, I marked out the ground six feet apart each way, and put three shovels full of street manure in a hill. I planted at least twelve seed in a hill. Calculated about two-thirds to be lost by the bugs. The produce was very large, as the family consumed many, many were pilfered and given away, and sold over one hundred dollars worth.

Fifty rods of asparagus, I cultivated as follows: sowed the seed, transplanted the third year to the bed for cutting. I prepared the bed by plowing deep, and highly manured with well rotted manure; when the bed was thus prepared, I took a large plow, and struck a furrow about twelve inches deep, set my plants in the bottom of the furrow, about ten inches apart, cover, then struck the second eighteen inches apart from the first, and so on until all are set. Top dressed with well rotted barn-yard manure and salt. My asparagus was of an extraordinary size and quality. Sold $69.66 worth at eleven cents per bunch, besides what was used in the family. I cannot tell how much fertilizing matter is taken from the soil to produce twenty bushels of wheat. I wish I could.

I have cultivated usually about an acre of strawberries, with success and profit. I have cleared over two hundred dollars in one year from one acre. My mode of cultivation is to take a clean piece of land in good condition, plow it very deep, harrow thoroughly, and spread evenly from two to three hundred bushels of leached ashes to an acre, mark the land in drills three feet apart, and insert the plants from eight to twelve inches apart, in the drills. I transplanted in April, or early in May. I obtained no fruit the first year, of consequence. I cultivate between the rows, as long as I can get through with the cultivator, and then let the vines run together, they will cover the ground entirely by the first of August. I do nothing with them again until the next spring, when I take a double team and heavy harrow, and go over the beds thoroughly, until the plants are sufficiently thinned; this loosens the ground and takes out all the weak plants. If the ground does not appear to be sufficiently rich, I apply another dressing of leached ashes; after this is done, the ground is laid off in beds, about five feet apart, and nothing more is done till the fruit comes to maturity. After the fruit is gathered, the beds are cleared of weeds, and left till the next spring. The second year I repeated the above method.

One great benefit I find in using ashes as a manure, is that it brings no weeds. I consider strawberries one of my best crops. I failed, however, entirely in my crop this year. I had one and a half acres of the pine apple variety, a variety much recommended for its prolific crops, and the superior quality of its fruit; my beds never looked so well as they did last spring, blossomed finely, and bid fair for an abundant crop, but after blossoming no berry appeared, and I had therefore a most splendid failure. I had not a full grown, perfect berry in the whole field, they were all pistillate plants. I have been setting rows of the Iowa variety through them, with the hope of better success the next year.

18. I usually sow clover and timothy seed on winter crops. Timothy in August and September, clover in April. Four quarts of timothy, and usually twelve quarts of clover to an acre. My land being upland, I prefer timothy and clover for pasture.

19. I mowed thirty-two acres this year, and averaged about one and a half tons per acre. I cut clover when the heads begin to brown, and timothy when in full blossom. Cure as much in the swath and cock as possible. To preserve the color and keep the leaves from shelling, salt in the mow, at the rate of four quarts to the load.

24. I was in the milk dairy business till last October, when I sold out. For the last two years previously I kept on an average about thirty cows. Since then seven. Nineteen I pasture for others. I keep for use on the farm, four mules, one horse, and one yoke of cattle. My cows are of the native breed.

25. I have made no experiment in the breeding or use of cattle. Have used for farm work, horses, mules and oxen I prefer mules for general farm purposes. Oxen the second best. I consider two mules as good, and will do as much work as three horses. I can keep three mules as cheap as two horses, besides saving much in shoeing, and costing nothing for farriery; they will work when very old, and I could not be induced to do without them.

26. I stable my cattle, and cut my feed principally and give them as much as they will eat. Water in the stable.

34. The depredations of the common peach worm I prevent by digging round the trees twice a year, and destroying them. This is the only troublesome insect I have had so far, except the common caterpillar, which is easily got rid of.

35. I keep the ground cultivated for two or three feet round the trees, and keep the ground covered with compost, when the orchard is in sod, which is not more than one year in four. I endeavor to keep my orchard well manured. I wash my trees with a preparation of lime and oil of soap, which keeps the bark smooth and thrifty.

37. I have a story and a half house, 24 by 36 feet, with kitchen back, 18 by 30 feet, 12 feet taken off for store room. The upper part of my main building is devoted entirely to sleeping rooms.

My main barn is 30 by 80 feet, standing upon a side-hill of gentle slope, end towards the hill; under the end where the ground is lowest, I take off twenty feet for a horse stable, making room for seven head of horses; the next twenty feet is a root cellar; the remaining forty feet is a cow stable with cisterns underneath for catching all the water that falls on the building. My water cistern occupies about twenty-four feet under this stable, and will hold something like two hundred hogsheads; the other sixteen feet is occupied by a cistern for collecting the urine from the stables, the floor being caulked and pitched, with a trough behind the cattle to conduct their urine to the cistern.

My manner of building the cisterns is this. I dig out the earth, of the requisite shape and dimensions, take cement and coarse sand of equal parts, mixed with water, and spread evenly about half an inch in thickness all round the sides, and on the bottom, and cover with planks, with earth over them. A cistern of the capacity of one hundred hogsheads can thus be built, with pump, complete, for less than twenty-five dollars.

The cow stable is arranged to accommodate twenty-four head of cattle in two rows, with an alley way between. The sides are filled in with brick. One part of the barn, over the horse stable, I use for hay, and the remainder of the space, over my thrashing floor and cow stable, for grain and fodder. Attached to my barn I have on the north a wagon house and tool shoop, 18 by 50 feet, with room overhead for hay and grain, opening into the main barn. To the south of the main barn, attached in the same way, is a building 18 by 100 feet; fifty feet is occupied as a cow stable, the remainder is open shed, with room overhead same as north wing. To the south of the southern shed I have my hen house, 12 by 18 feet, with large windows on the south side, to admit light and warmth. East and south of this shed is my barn-yard, protected from the north and west winds. The yard contains about three quarters of an acre, divided into two parts, the front one for most common use; in the rear one I have four barracks for coarse feed, where I fodder in the middle of the day in pleasant weather. East of my barn, some forty feet, I have a wagon house, 28 by 36 feet, with corn house and granary overhead. About one hundred and fifty feet in the rear of my house, I have a shop 16 by 24 feet, story and a half, with sleeping rooms overhead.

38. I have but one kind of fence, post and board, or plank, principally chestnut posts, and inch and a quarter culled spruce plank, four planks high, of which I have sixteen hundred and eight rods, costing about eighty cents per rod. I have no wire fence, and have seen none that I admire. My fences are all in good condition, all having been built within the last five years. As an evidence of the good quality of my fence, I have not received a shilling's damage to my crops for the last year, from either my own or neighbors' cattle.

39. I measure my grain, seed, and potatoes; weigh my beef, pork, and hay, and keep an account of all.

40. I keep a general farm account, of all my sales, receipts and expenditures, and can strike a balance at the end of the year; and thus ascertain my profits or losses.

ACCOUNT OF EXPENSES OF FARM.

407 days labor at 50 cents,	$203 50
Yearly and monthly labor,	665 00
One girl one year,	52 00
" four months,	16 00
500 bushels of oats at 41 cents,	205 00
Blacksmith's bill,	97 81
Grocery, shoe, and dry goods bill,	357 90
12 bushels grass seed at $2 25,	39 00
10 do clover seed at $4 50,	45 00
12 do seed wheat at $1.25,	15 00
Seed corn and garden seeds,	10 00
26 bushels seed buckwheat at 62½ cents,	16 25
State and school taxes,	31 22
Insurance in Mutual Ins. Co., average about,	4 50
Depreciation of farming tools,	100 00
Two tons of plaster,	10 00
1,000 bushels of lime, at 4 cents,	40 00
Grains for cows,	119 17
Hay bought in April last,	75 00
Total expenses for current year,	$2,174 35

The above includes all farm and family expenses, with the exception of doctor's bills and church expenses.

ACCOUNT OF RECEIPTS OF FARM.

363 bunches asparagus at 11 cents,		$69 66
Received from produce of 5 acres sweet corn,		257 33
610 bushels rye at 69 cents,		410 90
Melons, pumpkins, and citron melons sold,		148 00
831 bushels buckwheat at 44 cents,		365 44
Raspberries sold,		31 25
Potatoes, (including those unsold,)		100 00
1,240 bushels of corn at 65 cents,		806 00
Milk sold from an averarge of 30 cows, 9 months,		1,629 81
Sixty-four bushels, 35 lbs. wheat,		64 62
Five loads of hay,		40 00
Five loads of straw,		5 00
Broom brush, 4,920 lbs.,		250 00
Pigs sold,		40 00
Surplus of straw,		100 00
Surplus of corn stalks, part sold,		100 00
Twelve tons of clover hay at $6,		72 00
Chickens and eggs sold,		40 00
140 lbs. butter at 18¾ cents,		26 25
Peaches sold,		10 00
Pie plant,		11 25
Twenty-five calves at $1 each,		25 00
Received for pasturage,		18 50
Received for work done by teams and men during the State Fair,	$117 30	
Received for labor done for S. Van Rensselaer,	114 00	
		231 50
Total receipts for current year,		$4,852 51
Less expenses per account,		2,174 35
Net profits current year,		$2,678 16

Mr. MORE has furnished us with a brief summary of the products of his farm for the present year. It is necessarily imperfect, from the fact that the yield of only a portion of his crops had been ascertained, and but few of them marketed, when the statement was made—20th of October.

Barley, 33 acres, produced 895 bushels, weighing 48 lbs. per bushel—sold in the aggregate, $671.25, from which, deduct the total expense and charges incident to the crop, $262.75, leaves a profit of $408.50 besides the straw, which is valued at half the price per ton as hay. Asparagus, 50 square rods—sales $71.70—charges on same, $20—leaving as profit, $50.70. Potatoes, 12 acres—from which 602 bushels have been sold, at 50 cents per bushel, $301—400 bushels on hand, $200—aggregate value $501; total cost of the crop $205—leaving as profit $296. Indian corn, 14 acres—aggregate produce estimated at 560 bushels. Buckwheat eight acres—sold from the same to the amount of $62.50, at 50 cents per bushel. Hay, from 30 acres, 50 tons. Kept on the farm 17 cows—sold butter to the amount of $300. Kept 40 pigs, worth $5 each.

Since last year, Mr. MORE has increased the number of his apple trees from 1000 to 1800, and has now set to apple, peach, pear, plum, and quince trees, 52 acres. The spaces between the small trees, are set to raspberries, currants, strawberries, &c. The raspberries and currants, except such as were used in the family while fresh, were made into preserves and jellies—several hundred pounds of which are on hand unsold.

Farming in Pennsylvania.

In the early part of October, we paid a visit to Pennsylvania, for the purpose of being present at some of the agricultural exhibitions, and learning something of the agriculture of a part of that state. The first point of destination was Newtown, and after attending the fair of the Bucks County Agricultural Society, at that place, we took the opportunity of examining some of the farms in that neighborhood.

Bucks county has long enjoyed a great celebrity as a

farming district, and if that portion of the county which we saw is a fair representation of the whole, its reputation is not undeserved. It may be pronounced an interesting section. Its surface, though comparatively level, is sufficiently diversified to afford a pleasant aspect, numerous streams of excellent water, and roads which are easy to be traveled over. The proportion of wood, and its situation with respect to the cleared land, is such as imparts an agreeable variety to the landscape, and with the general neat appearance of the farms, and large and substantial stone dwellings and barns, few sections of the country present more attractions in respect to rural enjoyment and comfort.

From Mr. ADRIAN CORNELL, Jr., we obtained some facts in regard to the agriculture of the neighborhood, and especially in regard to the agriculture and products of his own farm, which we think will interest and benefit our readers. His residence is about three miles from Newtown, and about twenty miles north from Philadelphia. The place has been occupied by the ancestors of Mr. C. for several generations; a portion of the dwelling house was built by his great grandfather, in 1745, and the remaining portion by his grandfather, in 1762. It was a well known mansion during the Revolution, and while the British army was encamped in the vicinity, was more than once subjected to search, from being supposed to shelter "rebel" officers.

The home farm consists of 144 acres, exclusive of wood-land. It is devoted to mixed husbandry, as are most other farms in this section, a system which is generally found most profitable where circumstances are adapted to it, and especial so, where, as in this case, the products are regularly marketed from week to week.

THE SOIL is of very uniform character over the whole farm, and varies but little over a large extent of country from the Delaware river westwardly. The surface is mostly a fine, friable loam, underlaid, generally, with a grayish yellow clay, (probably impregnated with iron,) resting at various depths on sandstone strata. It is an excellent soil as regards mechanical relations; being easily tilled, not liable to pack closely under the effect of rains, nor to bake under the effect of drouth. This constitution renders the crops comparatively independent of the weather, as to wetness or dryness, and with good cultivation insures a certain return. We have before mentioned that a very protracted drouth had been experienced here the past season—scarcely rain enough to soak the ground to the depth of two inches, having fallen from June to the 25th of October; and yet on Mr. CORNELL's farm, and some others which we visited, the crops were nearly all good. It should be understood, however, that there appears to be an inexhaustible source of water through this district, at no very great depth in the earth, as is seen in numerous unfailing rivulets, and the abundant supply afforded by wells.

COURSE OF CROPPING.—Mr. CORNELL's farm is divided into lots of 12 to 16 acres, each of which (except what is devoted to orcharding) is in regular rotation, brought into the same crop. This rotation is the following: first year Indian corn, second year oats, third year wheat, fourth, fifth and sixth years clover and timothy—mowed two seasons and pastured one.

The sod for corn is usually plowed in November and December. From five to eight two-horse wagon loads of manure are spread before plowing. The land is then plowed to the depth of three and a half to four inches. This will appear to many persons as much too shallow. Mr. C. defends his practice by the argument that the sod and the manure should be kept where the crop will derive most benefit from them, that is, as near the surface as practicable, without suffering loss from exhalation. But the suggestion may be worthy consideration, whether a deeper tillage, which could be effected by a sub-soil plow without burying any deeper the manure or surface soil, would not be beneficial. In spring, about the last week in April, the ground is thoroughly worked over with a large cultivator, which brings the soil into excellent condition for planting. The corn is planted the first week in May. Furrows are made four feet apart for the rows, and the seed is dropped in them with a hand drill. The drill does not cover the seed, and to do this a harrow is drawn, with the teeth upward, in such a way as to fill the furrows. When the plants are fairly started, they are thinned so as to leave one every nine inches. The crop is gone over once with the hand hoe; the rest of the work is done with the cultivator. Strict attention is paid to the thorough eradication of weeds. For the twelve years Mr. C. has managed the farm, he has made it a rule that no foul plants should be allowed to go to seed, and the effect has been to almost wholly prevent their appearance. In a cornfield of sixteen acres, scarcely a weed could be seen, and over the whole farm nothing of the kind obstructed the growth of crops. The corn is cut up and shocked, as soon as it is ripe enough to cure. The yield averages sixty bushels per acre, measured as husked in the field. The cost of cultivation is 20 cents per bushel. The price it brings in market is usually 62½ cents per bushel. The fodder produced on an acre, yielding as above stated, is reckoned worth $6. The fodder is all fed out in the barn-yard, in order that the waste parts may be converted into manure.

Oats follow corn—sown as early in spring as the soil will admit of plowing, three bushels seed, broadcast, to the acre. No manure is given to this crop. The average yield is 60 bushels per acre. The average price which this grain brings in market, is 40 cents per bushel.

Wheat succeeds oats. The preparation consists in first spreading on the stubble, fifteen two-horse wagon loads of manure to the acre, which is immediately plowed in, three and a-half to four inches deep, harrowed, and left to rot till about the middle of September, when the ground is cross-plowed, about five inches deep. The soil is then reduced to a fine tilth by the harrow and roller, and the wheat sown by a drill, two and a-half bushels to the acre. The yield for the last ten years has averaged over 25 bushels per acre—has sometimes gone as high as 30 bushels per acre. The average price it has brought in market for the last ten years, is 110 cents per bushel. The kind raised by Mr. C., and almost the only kind raised in this part of the country, is the Mediterranean. It succeeds better against both the Hessian-fly and wheat-midge and is also less subject to blight. The grain has improved very much in quality, since it was first introduced, but in acquiring this quality, it has lost something of the peculiar habit by which it was enabled to resist the Hessian-fly. The straw was formerly very stiff, and the husk or sheath which enveloped the stem, adhered so closely that the insect could not obtain a lodgment for itself. The subject is agitated of making a new importation of this variety of wheat, for the object of securing the property for which it was at first specially valuable.

Clover and timothy seed are sown on the wheat at the close of winter, on a light snow, or early in spring, while the ground is very soft. Mr. C. likes the mode of putting in wheat by the drill—thinks the crop is usually better so than broadcast—but it has an objection in reference to the clover and grass, which is regarded as of some importance. The drill leaves the surface somewhat in ridges and furrows; the clover and grass-seed, though sown broadcast, tends to collect in the furrows, which causes it to grow in rows like the wheat, leaving the field imperfectly swarded over. The yield of hay is about two tons per acre. The whole amount of hay cut on the farm annually, is about 80 tons. Its average market value is $12 per ton.

FRUIT.—Mr. CORNELL has about twelve acres devoted to apple and pear trees—three or four acres of which are set to an apple orchard, as yet too young to bear much. In general these fruits are an important item of farm pro-

duce, but this year the trees bear but very little—not enough apples being obtained for the home demand.

Live Stock.—There are kept on the farm sixteen cows, two heifers, one bull, five horses, eight Leicester sheep, twelve swine, besides young pigs. The cows are chiefly a cross of the Short-horn and common stock; a few have a dash of the Devon. They are kept for making butter, not for breeding stock for sale. They are fed in winter in the barn, night and morning, on hay which is a mixture of clover and timothy, with what corn-fodder they are inclined to eati n the yard, while they are out. Each cow is also fed every day, from the time they come off grass till after their calves are fatted, with eight quarts of the following mixture: Two quarts corn-meal, three quarts shorts, one quart oil-cake meal. After the calves are taken off, and the milk is devoted to butter, the oil-cake is discontinued, from an idea that it injures the quality of the butter.

The cows calve the latter part of January or first of February. The main object in having them "come in" at this time, is that the calves may be fatted and sent off while veal will command a good price, and also leave the best of the season to be availed of for making and selling butter. The calves suck till they are six weeks old, and are then sold in market at four and three-fourths to five cents per pound, live weight. They bring from eight to ten dollars each. The cows being well fed and sheltered in a warm barn at night, and in all inclement weather, and allowed the liberty of the yard for exercise and air in pleasant days, they give a large quantity of milk, make the calves fat, and afford a large quantity of butter after the calves are taken away. The sixteen cows gave an average of 180 pounds of butter each, in 1850, besides fatting their calves.

Mr. C.'s ideas in regard to the proper way of keeping cows, deserve to be mentioned. He holds that they should have an abundance of good food, and be kept in good order. If they get *fat*, even, as they frequently do towards the time when they go dry, he considers it no disadvantage, and refuses to sell his best cows to the butcher, though offered a high price. He says the fat is not lost, that it is only stored up in the system, and after the cows calve, it goes into the milk, and either fats the calves, or forms butter. We think this is correct reasoning. Great loss is sustained in many instances by cows being very poor when turned to grass. When in this condition, it takes considerable time, and a large amount of food, to fill up the wasted tissues of the body, and give the animal any surplus to spare.

Butter Making.—As already remarked, butter is an article of importance on Mr. Cornell's farm, and it is so on most farms in this section. It is made with great care, and sent to Philadelphia every week, where it brings an average of twenty-five cents per pound. We made very particular inquiries in regard to the kind of room which was preferred to set milk in for this purpose, and found that spring-houses were considered best. We are satisfied this opinion is well founded. An unfavorable idea in regard to such houses has been entertained; but the objections have arisen from the want of proper attention to certain requisites, the most important of which is purity of air. The great advantage of spring-houses is the security of a proper temperature—50 to 55 degrees—by which the milk may be kept from souring till all the cream rises. But with this temperature it is essential that there should be a pretty free circulation of air, charged as little as practicable with dampness. This is found necessary for the perfect separation of the cream from the milk, and for the making of the best butter. Without a spring-house, it is difficult to obtain at all times the required temperature. Farmers who cannot avail themselves of a good spring, often used what is called a vault for setting milk. This is an under-ground room, the walls, roof, and floor of which are of stone. A dry and shaded situation is selected for the site. The dimensions are usually such as to admit of the milk being set on the floor, as that imparts a coolness to objects coming in contact with it. The top, which is commonly arched, should be high, (not less than nine or ten feet,) to promote ventilation, which is effected by an aperture in connection with the door, and a chimney or pipe at the opposite end of the vault, passing through the roof to the surface of the ground. It has formerly been the practice to build these vaults in connection with wells—that is, the vault is open to the well on one side. Mr. Cornell has two, one of which is of the latter kind, but its use has been latterly discontinued, and the other used in its stead. The advantage of a cooler temperature by a connection with the well, is over-balanced by the dampness, and this cannot be avoided with the imperfect ventilation which belongs to an underground apartment.

Mr. James C. Cornell, (a brother of Mr. A. C. jr., and whose farm adjoins that of the latter,) has a spring-house, the best, perhaps, we have ever seen, and never have we seen any place of the kind which indicated better management. The spring runs into the house at one end, and the water flows over the floor, which is of bricks, the depth being governed by a gate through which the water has an outlet. In warm weather the pans stand on the floor, and the water is raised round them to the height of two to three inches. The pots which hold the cream are also set in the water in warm weather. It is kept constantly running, and it is so cold that there is no difficulty in keeping the temperature of the room low enough for the cream to rise well. The house is in the shade of large trees, but the surrounding ground is solid and dry. There are windows in each side of the milk-room, near the roof, provided with shutters, by which the quantity of light is regulated, and wire netting to keep out flies. When the weather is too cool, or a higher temperature than that of the open atmosphere is wanted, the milk is set on shelves, and the room is warmed by a stove. This is done early in the spring and late in the fall.

The strictest neatness and care are practiced throughout the whole process of managing the milk, cream and butter. The milk is first strained into a large vat, which does not stand in the milk-room, and when considerably cooled is drawn off into the pans, which are set in their appropriate place. The cream is taken off before the milk sours. Mr. J. C. Cornell is confident that nothing is gained in quantity by allowing the milk to sour before it is skimmed, and that the souring is decidedly injurious to the quality of the butter. The particular crisis observed in taking off the cream is this: when the cream has all risen, it readily separates from the milk—the particles of cream adhering together, merely floating on the watery fluid below. A person can soon learn by close observation when the proper time has arrived. Mr. C. states that he has noticed when milk was permitted to sour before it was skimmed, that the acid of the milk appeared to decompose the cream, which was gradually made thinner—actually wasted away.

The cream is churned while perfectly sweet. A barrel churn is the kind used. It is worked by a horse, with a small lever-power. The churn is placed in an open room at one end of the dairy, a belt connecting with the power. When the butter is taken from the churn, it is worked, salted and set in the dairy for a day, when it is again worked over, and put up in pound lumps for market. Mr. J. C. C. is not in favor of using water for working butter, believing that water injures the flavor of the butter, and operates against its keeping. It is worked on a table with a brake. The form of brake found to operate best, is three inches wide and an inch and a half thick, with square corners. This is better than a round or oval form, as the operator can keep the butter better together, and press every part more equally. In moulding it into lumps, a small shallow scoop and spatula, both of wood, are used—the hand not being brought in contact with the butter. The Ashton salt is the kind used, a little less than an ounce to the pound of butter. Neat tubs, holding ten pounds each, are used for conveying the butter to market. In warm weather they are packed in boxes with ice. The butter is all sold to regular customers, who engage a given quantity for each week. We scarcely need to say, that the quality of the butter is unexceptionably fine.

Poultry.—Considerable attention is paid through this section to raising chickens and turkeys for market. A

variety of fowls has long been bred here which has been so noted as to receive the name of "Bucks county breed." It is not easy to obtain an authentic account of their introduction; but it is evident that they belong to the family known as Malay, Chittagong, Shanghae, &c. The stock has however been much improved in some instances, and is not unfrequently found of much better shape, better quality of flesh, and even greater weight than most of the newly-imported fowls of the same tribe. Mr. ADRIAN CORNELL, Jr., has kept quite a large stock of poultry for several years. He kept last winter, seventy hens and seven cocks, and this is about his average number. He has several stocks which he breeds by themselves. The old Bucks county stock, we were assured by the elder Mr. CORNELL, who is upwards of seventy years of age, has been kept, unmixed, on this farm, for more than fifty years. These fowls, whatever some writers may say as to their being "mongrels, comparatively worthless," breed with more uniformity, as to shape, size, and color, than any of the large Asiatic fowls that we have seen, imported within the last ten years! Mr. C. raises them every year. They are usually short-legged, broad-breasted, rather small boned for their weight, and give a good quality of flesh. But the stock to which Mr. C. gives the preference, eggs and flesh considered, was imported from China in 1842. They are now mostly black—having been bred with a view to obtain that color for the eight years Mr. C. has had them. He has paid particular attention in the selection of these for breeding, to the proper shape, and has improved the stock much in this respect. They are large—the hens frequently weighing eight and the cocks ten pounds each. They are greatly disposed to fatten, and on this account sometimes attain heavier weights than mentioned. Mr. C. selected two hens from his flock last spring, to be sent to a person in England, who wished to obtain the best specimens of American fowls, that weighed a fraction over ten pounds each. Mr. C. has also the Jersey Blues, and specimes of several of the late importations—"Shanghaes," "Cochin-Chinas," &c. For the stocks which he wishes to breed by themselves, Mr. C. has separate yards. In February, the requisite number of the best fowls of each stock is selected, and put in their respective "walks." The eggs laid by the selected fowls are hatched by other hens, which run at large, or are kept in different places. The chickens are hatched in April and May. The fowls are only kept in separate yards about three months. The rest of the year they all run together uncontrolled. Towards the latter part of the time they are confined in yards; they sometimes get the habit of pulling out and eating each other's feathers. Mr. C. thinks this is caused wholly by the fowls being discontented and worn down by confinement.

Mr. CORNELL began the business with the object of selling eggs and chickens in the market, but of late years has made sales of breeding stock to good advantage. Chickens usually sell in Philadelphia, dressed, nine cents per pound, and eggs at fourteen cents a dozen. He caponises more or less fowls every year. SAMUEL REED, of Joabstown, N. J., makes a business of doing this work. He goes through a large extent of country, perhaps twice in a season, and operates on all the fowls that are brought to him, charging five cents each. He sends word when he is coming, and the fowls are shut up and kept without food for a day. He has castrated 275 in a day, and castrates from 12,000 to 15,000 in a year. Not more than one in a hundred die from the operation. Last year Mr. CORNELL had forty-eight chickens and six turkeys caponised by him in one day, day, and lost but one. The age preferred for doing this, is three to four months, or when the feathers are well set. Capons are usually killed in February, when about ten months old. They are made very fat by full feeding for a month before they are killed, and weigh, dressed, from sixteen to twenty-two pounds per pair. Mr. C. has had a pair weigh *thirty-two* pounds, dressed, at fifteen months old, and he sold them at seventeen cents per pound. The usual price is about twelve cents per pound.

Mr. A. CORNELL, Jr., keeps but few turkeys; his brother (Mr. J. C. C.) had about 100, and he remarked that he thought they saved him a $100 worth of grass this year, by killing grass-hoppers, which have been very numerous. The turkeys were worth a dollar a piece for market.

The income from Mr. A. C., Jr.'s poultry for the last two years has been as follows: 1849 sales of poultry and eggs $211.85—used in the family to the amount of $38.15—equal to $250; 1850, sales, $131.39—used in family and otherwise disposed of, $68.61—equal to $200.

LABOR.—Mr. A. CORNELL, Jr., employs two men on his farm the year round; one of them, as foreman, receives $150 a year, and his board, the other $110 a year and board. The other hired labor on the farm amounts on the average to about $30 a year. The hired female labor in the house costs $75 a year besides board. Mr. C. superintends the farm operations. It will not be amiss to say, in order to give an idea of the labor actually employed on the farm, that Mr. C. has but one child, a son, whose time is spent at school. His taxes amount to $100 a year. The following is a copy of his memorandum of sales for 1850:

Butter and calves,	$623 96
Hay,	261 87
Fruit,	258 60
Wheat,	193 65
Oats,	136 88
Poultry,	131 39
Pork,	64 52
Wool and lambs,	40 00
Grass-seed,	20 00
	$1,735 87

Some remarks in regard to farm buildings, fences, and the management of manures, are deferred to another occasion.

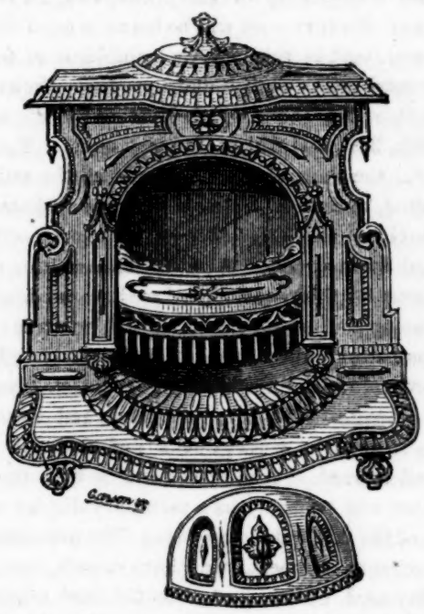
Chinch-bug.

L. TUCKER, ESQ.—A friend has kindly lent to me the October number of "The Cultivator," containing an article by Dr. ASA FITCH, on wheat-insects. The "*bugs upon growing wheat*," noticed by Dr. FITCH, are no other than young *chinch-bugs*, insects that have long been known in the Southern and Western States for their depredations on growing wheat, Indian corn, and other grains. They are mentioned in the eleventh volume of Arthur Young's "Annals of Agriculture," published about 1788, from which work Messrs. Kirby and Spence probably compiled the following account of them in the first volume of their "Introduction to Entomology:" "America suffers in its wheat and maize from the attack of an insect, which, for what reason I know not, is called the chintz-bug fly. It appears to be apterous, and is said in scent and color to resemble the bed-bug. They travel in immense columns from field to field, like locusts destroying everything as they proceed; but their injuries are confined to the states south of the 40th degree of north latitude." "From this account," add Kirby and Spence, "the depredator here noticed should belong to the tribe of *Geocorisx*, Latr.; but it seems very difficult to conceive how an insect that lives by suction, and has no mandibles, could destroy these plants so totally." I have ascertained, from an examination of living specimens, that the chinch-bug is the *Lygæus Cucopterus*, described by Mr. Say, in Dec., 1831, in a little pamphlet on the "Heteropterous Hemiptera of North America." It is a mistake that these insects are confined to the States south of the 40th degree; for I have been favored with them by Professor LATHROP, of Beloit College, Wisconsin, and by Dr. L. BARON, of Geneva, Illinois. The latter gentleman had no difficulty in ob-

taining a sufficient number without going out of his own garden. A very good account of them, with an enlarged figure, will be found in the "Prairie Farmer" for December, 1845. In the same publication, for September 1850, may be seen an excellent description of this insect by Dr. LeBaron, who, not being aware that it had been previously named by Mr. Say, called it *Rhyparochromus devastator*. The eggs of this insect are laid in the ground, in which the young have been found in great abundance, at the depth of an inch or more. They make their appearance on wheat about the middle of June, and may be seen in great numbers, and in various stages of growth, during the whole summer. Some of them continue alive during the winter in their places of concealment. Other particulars concerning these insects are given in the Prairie Farmer. Yours, resp'y, T. W. Harris. *Cambridge, Mass., Oct.* 31.

Heating Apparatus for Dwellings.

The substitution of stoves for open fire-places, has effected a great saving of fuel, and in a pecuniary view is an important improvement; but it is more than probable that in our efforts to secure this advantage in the greatest degree, an injurious sacrifice of health has been in many cases sustained. A serious objection to close stoves is, that they tend to prevent the renewal of the air of the room, and give off more or less noxious fumes. The injury in the latter particular of course, depends on the nature of the fuel employed. Anthracite and bituminous coals often contain sulphur, and sometimes arsenic, and when burned in stoves, without free draught, evolve gases which con-



taminate the air. Dr. Ure speaks of such stoves as "pseudo-economical," and says, "There is no mode in which the health and life of a person can be placed in more insidious jeopardy, than by sitting in a room with its chimney closed up, with such a choke-damp-vomiting stove." Of late, attention has been directed to obviating the objections to close stoves, without incurring a large loss on the score of economy. Considerable success has in several instances been attained in this respect, but so far as the writer is acquainted, the object has been most perfectly accomplished by the "Franklin Coal-Burner." It posseses the advantages of the Franklin-Fire-Place or open grate, with the additional advantage that it may be set in any part of the room, and connected with the chimney by pipe. It is neat and tasteful in design, and superior in respect to finish and quality of casting,—and affords the cheerful light of an open fire, with sufficient ventilation for health, making, at the same time, but a comparatively small consumption of fuel. We have tested it for anthracite coal, with which it operates in the most satisfactory manner. It is equally well adapted to burning bituminous coal. It was introduced here, and is made by Messrs. Jagger, Treadwell & Perry.

Exotic Vegetables.---The Tea Plant.

It would seem to have been intended by nature that all vegetables should not do equally well in all climates and countries, and that some should do better in foreign countries than in their own. There is nothing better known in medicine, than that certain medicinal plants are active only when grown in certain countries. Rhubarb for example grows and thrives in this country with vigor, and does excellently well as a *culinary* vegetable; but as a medicine it is almost worthless. It must be grown in Turkey, or some part of Asia, to be a good medicine. The same is the case with numerous other plants. Digitalis, for example, grown here, is worthless, and so is Colchicum, while the roadsides and meadows of England in the same latitude afford them in all their excellence The Irish potato produces a better article of food anywhere else than in its native country. The highly glutinous white wheat of Maryland, when grown in the Genesee country loses a large portion of its gluten. Now why is all this? It seems to be a result of the all-wise providence of nature, the object of which is to keep up commercial intercourse with all parts of the world. If all plants would do as well in all parts of the world, then each portion of the world would have no occasion to import from other portions, and thus the population of each portion would become stagnant and inert. As it is, the teas of China induce us to send something that we produce there to pay for teas. So with all other products. I do not believe that tea will ever be cultivated in this country. Experiments have been tried with it for forty years. The plants can be cultivated successfully, but the tea produced from them has not the flavor of China tea. And it seems to me almost a pity that we should succeed in cultivating tea, for if we should a very large inducement for intercourse with China would be annihilated, and thus *her* civilization be retarded. England will never succeed in cultivating cotton in her East India possessions. She must purchase cotton from us. Because the varied productions of the earth, each in its locality, are necessary to keep up the intercourse of the various populations. for the advancement of the welfare of the whole. S.

To Cleanse Jars,—fill them with rather hot water, and stir in a spoonful or so of pearlash (or caustic potash is better) pouring off, and repeating if necessary. The adhering contents will be immediately disengaged. In extreme cases, let the water and pearlash stand a few hours. Rinse the jar with cold water. Vials and other vessels are easily washed this way.

NOTES FOR THE MONTH.

To our Agents and Correspondents.

Having arrived at the end of another volume, we renew the expression of our obligation to all who have contributed, by their efforts, to the circulation of THE CULTIVATOR the present year, and most respectfully solicit their influence in behalf of our next volume. We are dependant upon you, gentlemen, for our circulation. The annual subscription is so small, that we are compelled to adhere to our rule of advance payments, and consequently all papers are discontinued at the end of the year. Whether our subscribers renew their subscriptions or not, depends, in a great measure, upon the fact of their being called on to do it, by some local agent, as no travelling agents can be employed on a paper published at so low a price. We therefore earnestly solicit your continued efforts, and hope you may all feel sufficient interest in the progress of Agricultural Improvement, to induce you to make the effort necessary to make your lists at least as large, if not larger, than the present year.

To a large number of post-offices, we send only to a single subscriber. If that subscriber would himself act as agent, or induce his Postmaster to get up a club, he would very greatly oblige us, as well as benefit his neighbors, whom he should be instrumental in inducing to read THE CULTIVATOR. It will be seen that we have added several prizes to our Premium List, and we trust there will be a spirited competition. It will be noticed also, that the Premiums are to be paid in CASH, SILVER PLATE, or AGRICULTURAL BOOKS or IMPLEMENTS, at the option of the agent

Prospectuses are sent to all our Agents, and we shall be glad to send Prospectuses and specimen numbers, to all who may be disposed to act as agents.

To all CORRESPONDENTS who have contributed to our pages during the current year, we tender our hearty thanks. They have benefitted all our readers, and the consciousness of the good they have thus done, will, we trust, stimulate them to continue their contributions. We have, however, hundreds of readers, who have enjoyed all the benefit of the labors of others, without contributing at all to the fund of information brought together in our pages. Would that we could convince them of their duty to contribute their share of knowledge to the common fund. We should be glad to have every one of our readers furnish us with rough notes of the results of their experience in the various branches of rural affairs. No one need refuse because he is not accustomed to write for the press, as we shall cheerfully make all the corrections necessary.

☞ Our HORTICULTURAL DEPARTMENT has been unavoidably crowded out this month. We will make amends for it hereafter.

☞ Several communications are necessarily laid over, which will have a place in our next volume.

SOUTH DOWN SHEEP.—Those who wish to purchase this breed of sheep, are referred to the advertisement of Mr. ROTCH, whose sheep, it is not too much to say, are fully equal to any in the country.

Premiums to Agents of the Cultivator.

As an inducemen to those disposed to act as Agents, the following *Premiums* will be paid in CASH, SILVER PLATE, or AGRICULTURAL BOOKS and IMPLEMENTS, to those who send us the largest list of subscribers for THE CULTIVATOR for 1852, previous to the *tenth of April next.*

1. To the one sending us the largest number, with the pay in advance, at the club price of sixty-seven cents each, the sum of FIFTY DOLLARS.
2. To the one sending us the next largest list, the sum of FORTY DOLLARS.
3. To the one sending us the next largest list, the sum of THIRTY-FIVE DOLLARS.
4. For the next largest list, the sum of THIRTY DOLLARS.
5. For the next largest list, the sum of TWENTY-FIVE DOLLARS.
6. For the next largest list, TWENTY DOLLARS.
7. For the next largest list, FIFTEEN DOLLARS.
8. For the next largest list, TEN DOLLARS.
9. For the next largest list, FIVE DOLLARS.
10. To all who send us Thirty Subscribers or over, and do not receive one of the above Prizes, a copy of THE HORTICULTURIST for one year.
11. To all who send us Fifteen Subscribers, and do not receive one of the above Premiums, THE HORTICULTURIST for six months.

ACKNOWLEDGEMENTS.—Communications have been received from T. S. Dewing, H. W. Bulkley, A. Mot, H. G., S. Clarke, G. W. Youngman, John Diehl, Elizabeth Diehl, Prof. J. P. Norton, Dr. T. W. Harris, A Lover of Farming, Frank, S. B. Buckley.

BOOKS, PAMPHLETS, &c., have been received as follows: Mr. GEO. R. RUSSELL'S Address before the Norfolk Ag. Society, at Dedham, Sept. 24, 1851, from the Author.——Catalogue of the Commercial Garden and Nursery of PARSONS & Co., Flushing, L. I.——Glances at Europe, by HORACE GREELEY, from the publishers, DE WITT & DAVENPORT, New-York.——Patent Office Report, for 1850–51—Part II. Agriculture,—from Hon. THOMAS EWBANK, Com. Patents.

WINTER EXHIBITION OF THE NEW-YORK STATE AGRICULTURAL SOCIETY.—It will be borne in mind that this Society will hold in this city, an exhibition of fat animals, dressed meats, seeds, dairy produce, fruits, &c., in connection with the Annual Meeting for the coming year—20th, 21st, and 22d of January next. The place selected for the show of live-stock, and all the articles to be exhibited, excepting fruits, is the yard and sheds belonging to GALLUP'S *United States Hotel*, corner of Washington and Swan streets. About $600 have been offered in premiums for this occasion, and we have no doubt that an interesting and useful exhibition will be made. The premiums not only refer to the best fat cattle and sheep to be shown alive, but also the best *carcasses*, (dressed,) of swine, Long-wooled, Middle-wooled and Cross-bred sheep—best turkeys, geese, ducks and fowls, including capons, all dressed. And in connection with the exhibition there will probably be a voluntary display of live poultry, of the celebrated varieties. The premiums embrace specimens of wheat, rye, barley, oats, corn, peas, beans, flax seed, clover seed, timothy, and other grass seeds, and hops. There is not a more favorable point in the country, than Albany, for the collection and purchase of all these articles, and we believe that the butchers, provision-dealers, seed-dealers, &c., from the south and the east, can be induced to attend this exhibition—and that a permanent Annual Fair of this kind may be established here, which may greatly conduce to the mutual benefit of the producer, dealer, and consumer. A little exertion on the part of those interested, we are confident would secure this result. Bills containing the pre-

miums may be had gratis, on application to Mr. JOHNSON, the Secretary of the Society.

ADDRESS OF HON. FREDERICK HOLBROOK AT THE VERMONT STATE FAIR.—Seldom have we seen so much valuable thought in so small a compass. It is strictly an Agricultural Address, presenting the importance and dignity of man's sphere, as the tiller of the soil,—the scope which the varied branches of agriculture gives to superior talent,—the high purposes which should animate every farmer, and the rich reward which awaits his successful efforts. He claims that more is required of the farmer of the present day, than to have the "hard day's work in him"—that agriculture should be studied as a rational, progressive science, and have among its chief votaries, high-minded, intelligent young men, who know how to observe and compare, to invent and improve, and in what way to perfect their profession. He argues, that a mind thoroughly imbued with first principles, familiar with the laws of nature and the mode of their manifestation, would find food enough for its ambition, and sufficient range for its power, in a pursuit which was in the beginning man's only inheritance, and more than all, would preserve, by constant communion with nature, that natural simplicity, integrity and love of country, which render man worthy of a citizenship in a free and enlightened country, and those hidden virtues which make a rural home attractive and happy. We cannot but admire the spirit that breathes in the whole production, and believe that a Society, which has so auspiciously commenced its existence, will do much in carrying out the exalted aims, which its president has exhibited so profoundly, truthfully and practically.

CORRECTION.—A letter has been received from Prof. MAPES, with reference to some remarks, (see page 339, Oct. No.,) attributed to him, in which he says, "*I feel it a duty to deny most emphatically ever having made such assertions at the Farmer's Club, or elsewhere.*" He says that he read a letter to that body from Mr. P. Mason, of Somerville, N. J., who asserts that he had raised pork at 4¼ cents per pound, *on cooked corn meal*, and that when a similar pen was fed with *raw meal*, the pork cost 12½ cents per pound. Also a letter from Mr. James Campbell, of Weston, N. J., giving some results of the feeding of carrots to cattle, but that he made no mention of feeding carrots to hogs. Our authority for the statement attributed to Prof. MAPES, was a report claimed to be "official," which we found in the New-York Leader.

FAIR OF THE AMERICAN INSTITUTE.—The animal department of this exhibition the present year, is stated to have been superior to the display of any former year. We are informed by those who attended, that the cattle, sheep, and swine, comprised many of the very best specimens of the various esteemed breeds. The departments of manufactures, implements, &c., though not as full as in some former years, were considered rather superior in respect to the character of the articles. A very large number of premiums has been awarded, consisting of gold and silver medals, money, plate and books; but want of space obliges us to refer to the official Report of of the Institute for particulars.

VARIETY OF DUCKS.—We saw at Col. SHERWOOD's, in Auburn, last summer, a singular variety of ducks, and on inquiry were told that they were obtained from Mr. JOHN S. CLARK, of Throopsville, Cayuga county. We were so much interested in their appearance, especially from their striking resemblance to the wild black-duck, (*Anas obscura*,) that we wrote to Mr. CLARK to learn their history. In reply, he said—"The ducks you inquire about, have been bred distinct from any other variety, at least twenty years. We obtained them some ten years since, in Orange county, and were then told that they were originally descended from the wild black-duck, and from the great resemblance, I have no doubt the statement is true, but cannot affirm this as a certainty. The characteristics of this variety are, nearly a uniform color, [a little darker than the wild black-duck,] good size, attaining the weight of eight pounds, dressed, at four months old, very quiet, and very prolific, one duck laying from 150 to 200 eggs in a season, with proper care. There are some in this vicinity which have lately acquired a *top-knot*, equal to any Poland fowl." We have lately received from Mr. CLARK a pair of these ducks, which fully answer the above description. The drake has the top-knot in perfection. There also came with this pair, a couple of the beautiful wood, or summer duck—the handsomest of all the duck family

SINGULAR PHENOMENA.—Mr. THOS HANCOCK. of the Ashton Nurseries, Burlington, N. J.; informs us that on the 2d of Nov., a most singular phenomena was observed at a pond adjoining his lands. The fishes, consisting of pike, sunfish, ca fish, roach, eells, &c., of all sizes, from one to twenty-two inches, were dying in great numbers. He states that the water appeared unusually clear, and seemed to magnify the objects in it. The pond gets low in summer and fills up with the fall rains. With the exception of a ditch recently opened into the pond, about half a mile above the outlet, there had been nothing to affect the state of the water. Can any one account for this?

Small Potatoes to Plant.

A writer in the Cultivator last spring, stated that small potatoes were as good to plant as large ones. I had some doubts of it at the time, and thought that inasmuch as the size of all the potatoes raised in the season of 1850, were uncommonly small, it was possibly like making a virtue of necessity to recommend small potatoes to plant. However, I thought that I would try the experiment. I therefore took four rows across my patch, side by side, land of equal quality and condition, and planted them on the 19th day of April, 1851—two rows with very small potatoes, averaging in size from a walnut to a small butternut, and put two and three in a hill. Planted the other two rows with a full common large size potato. In the course of the season, I could not discover any difference in the appearance and size of the vines, and on the first day of October, 1851, I dug the said four rows. There was a fair yield of good size potatoes in the whole; and I could not perceive any difference in the size, quality or by measure, between those rows planted with the small potatoes, and those planted with the large ones. I

I make this statement of the result from my own experiment. Yours respectfully, H. G. *West Greenfield, Saratoga co., N. Y., Oct. 5*, 1851.

UNIVERSITY OF ALBANY.—We had expected to publish this month, the programme of the AGRICULTURAL DEPARTMENT of the University, but we have to send our paper to press before the arrangements for the School are entirely perfected.

Horses vs. Oxen for Farm Labor.

We have always held that the expediency of using horses instead of oxen for farm labor, must depend on circumstances—such as the nature of the soil, and the general character of the surface of the farm, as to hills or plains. A writer in a late English paper, makes some sensible remarks on this subject. He says,

"By some it has been contended that oxen ought not to be used for plow or draught, and that early maturity alone is and ought to be the leading object of the grazier. Now, it is somewhat singular that although essay after essay has been written in favor of the exclusive use of the horse for the purposes of husbandry, and calculation after calculation has been supplied in support of this view, still, upon hill-farms and tenacious soils, the Sussex, Hereford, Devon, Scotch, and Welsh oxen are found successfully competing with the horse teams; practically proving their profitable employment and better adaptation to their work than the horse. The result of the inquiry instituted on the comparative merits of the horse and the ox for the purposes of draught has been highly satisfactory. Upon some lands the horse carries the palm of victory, and on others the ox is triumphant, thereby showing that each locality is the best judge of its own requirements. On the side hill, where a dead pull is required, the ox team is brought into use; while upon the light vegetable moulds the horse is every way superior."

From the Albany Argus, of Nov. 15th, 1851.

MR. RUSSELL COMSTOCK, of Mabettsville, Dutchess county, N. Y., lectured on his invaluable discovery in vegetation, in the N. Y. State Ag. Rooms, in this city, yesterday, to a very intelligent audience; several of whom were Presidents and ex-Presidents of Agricultural Societies. The opinion appeared to be general that Mr. Comstock's newly discovered principle, was of very great importance.

Many have requested me to repeat my lecture in Albany, but prior engagements occupy every day for a month or more.

I hope to lecture in Albany city, during the annual meeting of the N. Y. State Agricultural Society, on or about the 21st of January, 1852. RUSSELL COMSTOCK.

Albany, Nov. 15, 1851.

Russell Comstock's Inestimable Discovery Explained.

[A COPY.]

Chester, Orange co., N. Y., Nov. 10th, 1851.

We, the undersigned, have listened to Mr. Russell Comstock's disclosure of his discoveries in vegetation, and his successful system of cultivation, which is founded on his discoveries, with great interest; and his facts and conclusions we think are perfectly reasonable, causing conviction of the great practical utility of his system of cultivation.

His natural laws accurately direct the judicious application of labor and manures. Duty also prompts us to urge, that all our agricultural friends and lovers of science hear his lecture without delay, and at any season of the year.

Charles B Howell, John H. Vail, D. B. Foster, Gabriel Seely, Jr., P. Gregory, James W. Wood, James J. Board. Dec. 1—1t.*

Contents of this Number.

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